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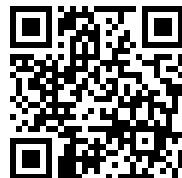
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1923 Graphite Index

Volume XXV

	Page
A. D. 1	123
Advertised, Only Reliable Products Can Be Continually.....	134
Advertising, The Business of....	130
Alloys, Factors Affecting Contraction of	41
Another Prize Dixon Window...	139
Arbitration Under the New Jersey Act of 1923, Commercial..	130
Armstrong Mfg. Co.	81
Around the World with Johnny Ready	8
Automobile, Good Grease is the Cheapest Maintenance Cost of an	32
Babbitt Metal, Production of....	38
Backward Glance, The	10
Baker Gun and Forging Co....	46
Bearings in Mine Cars, Timken.	124
Bearings Speed Up Handling Bales of Cotton, Heavy Duty Trailers with Roller. Norfolk Warehouse Corp.....	86
Beautiful Window, A	128
"Best" Intention, Done with....	34
Brady & Co., at Calcutta Motor Show, Display of Dixon's Lubricants at Booth of W. H....	104
Breton Girl, A	99
Bridges:	
Glen Mills Bridge	9
Highway Bridge, Haverhill, Mass.	129
Bridgeton Gas Light Company, The	117
Business of Advertising, The....	130
California Packing Corp., Plant No. 5	21
Car Protection, Tank	134
Charts for Mack Trucks, Dixon Lubrication	79
Confidence in Selling	52
Carolina Water Tanks, A Few..	56
Casting, An 18,650 lb.	65
Central Arizona Light and Power Company	90
Century, A Quarter of a.....	10
Charred Paper Records Not Necessarily Lost	128
Church at Meaux, The Gothic..	3
Coke Drawing and Loading Machine, Covington Machine Company, Low Moor, Va.....	23
Commercial Arbitration Under the New Jersey Act of 1923..	130
Contraction of Alloys, Factors Affecting	41
Correction, A	118
Covers:	
Church at Meaux.....	1
Harkness Memorial Tower....	25
New Nebraska State Capitol..	49
Memorial Museum	73
Breton Girl	97
Merry Christmas	121
Covington Machine Company, Low Moor, Va., Coke Drawing and Loading Machine	23
Crack Liners of the Los Angeles Steamship Co.	30
Crouch Hardware Co.	45
CRUCIBLE DEPARTMENT:	
Crucibles, A Long Trip for...	81
Crucibles in Brass Foundry Practice, The Difference be-	

1923 GRAPHITE INDEX

Page	Page
tween Ferrous and Non-Ferrous Metals and the Care of	
67, 91, 115	Elevator Stacks, Grand Trunk
Difference Between Ferrous and Non-Ferrous Metals and the Care of Crucibles in	Railway
Brass Foundry Practice, The	140
67, 91, 115	Eldorado Window Display
Long Trip for Crucibles, A....	62
Metals and the Care of Crucibles in Brass Foundry Practice,	England, Dixon's Silica-Graphite
The Difference between Ferrous and Non-Ferrous 67, 91, 115	Paint in
Pioneer Brass Works	38
Crucibles, A Long Trip for...	Explanation, An
Crucibles in Brass Foundry	116
Practice, The Difference be-	Facings, Foundry
tween Ferrous and Non-Fer-	19
rrous Metals and the Care of	Facings, Proper and Improper
67, 91, 115	Methods of Applying Foundry
Cuppet Motor Company	43
Deed, A Noble	Factors Affecting Contraction of
Difference Between Ferrous and	Alloys
Non-Ferrous Metals and the	Featherstone, Inc., Dixon Dis-
Care of Crucibles in Brass	play, E. A.
Foundry Practice	28
Display of Dixon's Lubricants	Few Carolina Water Tanks, A..
at Booth of W. H. Brady &	Fine Window Display of Dixon
Co. at Calcutta Motor Show... 104	Pencils, A
Dixon Display, E. A. Feather-	71
stone, Inc.	Five Tragedies
Dixon Lubrication Charts for	34
Mack Trucks	Foundry Facings
Dixonman's Hotel Sample Room	19
Display, The	France, Dixon Pencils in.....
103	101
Dixon Pencil Window in Paris, A	Gear for 450 Miles, Locked in
100	Second
Dixon Pencils in France.....	28
Dixon's Silica-Graphite Paint in	Gibbons Coal Company
England	94
Done with "Best" Intention....	Girl, A Breton
34	99
Earthquake—Safe! Out of the... 106	Glance, The Backward
18,650 lb. Casting, An	10
65	Glen Mills Bridge
Eighteen Years' Paint Service. 129	9
Elevator Lubrication, Hydraulic	Good Grease Is the Cheapest
Plunger	Maintenance Cost of an Auto-
89	mobile
	32
	Gothic Church at Meaux, The ..
	3
	Grain Storage Tank, Schuylkill
	Flour Mills
	142
	Grand Trunk Railway, Elevator
	Stacks
	140
	Grease, A Testimonial for 672..
	82
	Greenville City Water Works,
	Standpipes
	57
	Guide Post.....16, 40, 64, 111, 126
	Harkness Memorial Tower Draw-
	ing—by Earl Horter with
	Dixon's ELDORADO, "the
	master drawing pencil," on see-
	ing the
	27
	Heavy Duty Trailers with Roller
	Bearings Speed up handling
	Bales of Cotton. Norfolk Ware-

1923 GRAPHITE INDEX

Page	Page		
house Corp.	86	Cuppet Motor Company.....	31
Henderson, Meet Mr.	42	Display of Dixon's Lubricants at Booth of W. H. Brady & Co., at Calcutta Motor Show	104
Hero Worship	40	Dixon Display, E. A. Feather- stone, Inc.	28
Historic Spot, A	46	Dixon Lubrication Charts for Mack Trucks	79
Houses in France, Straw	9	18,650 lb. Casting, An	65
Humor..16, 20, 23, 40, 80, 82, 94, 118 119, 134, 137, 139, 140, 142		Elevator Lubrication, Hydru- lic Plunger	89
Hydraulic Plunger Elevator Lubrication	89	Facings, Foundry	19
Idea, A Window Display with an	111	Facings, Proper and Improper Methods of Applying foundry	43
Indifference to Weather	102	Featherstone, Inc., Dixon Dis- play, E. A.	28
Important Notice!	82	Foundry Facings	19
Indispensable Lead Pencil, The..	58	Gear for 450 Miles, Locked in Second	28
Johnson, Dudley A.	4	Good Grease is the Cheapest Maintenance Cost of an Automobile	32
Koenigs Mark Mill Co.	143	Grease, A Testimonial for	672
Life Insurance Company	118	Hardware Co., Crouch	45
Little Sermons to Salesmen....	127	Heavy Duty Trailers with Roller Bearings Speed Up Handling Bales of Cotton.	
Locked in Second Gear for 450 Miles	28	Norfolk Warehouse Corp... Hydraulic Plunger Elevator Lubrication	86
Longevity of Paint, The.....	7	Locked in Second Gear for 450 Miles	28
Long Trip for Crucibles, A.....	81	Low Moor Iron Company, Plants of the	132, 133
Los Angeles Steamship Co., Crack Liners of the	30	Lubricants at Booth of W. H. Brady & Co., at Calcutta Motor Show, Display of Dixon's	104
Lost, Charred Paper Records not Necessarily	128	Lubrication Charts for Mack Trucks, Dixon	79
Low Moor Iron Company, Plants of the	132, 133	Lubrication, Hydraulic Plunger Elevator	89
LUBRICANT DEPT:		Mack Trucks, Dixon Lubrica- tion Charts for	79
Automobile, Good Grease is the cheapest Maintenance Cost of an	32	Maintenance Cost of an Auto-	
Bearings in Mine Car, Timken	124		
Baker Gun and Forging Co... Bearings Speed Up Handling Bales of Cotton, Heavy Duty Trailers with Roller, Norfolk Warehouse Corp.	46		
Brady & Co., at Calcutta Motor Show, Display of Dixon's Lubricants at Booth of W. H.	104		
Casting, An 18,650 lb.....	65		
Charts for Mack Trucks, Dixon Lubrication	79		
Crouch Hardware Co.	45		

1923 GRAPHITE INDEX

Page	Page		
mobile, Good Grease is the Cheapest	32	Facings, Proper and Improper	43
Methods of Applying Foundry Facings, Proper and Improper	43	Metropolitan Supply Co., at Cedar Rapids, Iowa, New Plant of the	53
Mine Cars, Timken Bearings in	124	Mine Cars, Timken Bearings in	124
Norfolk Warehouse Corp. Heavy Duty Trailers with Bearings Speed Up Handling		Miscellaneous.....	23, 64, 71, 137
Bales of Cotton	86	Museum, Memorial	75
Plants of the Low Moor Iron Company	132, 133	National Theater	119
Proper and Improper Methods of Applying Foundry Facings	43	Nebraska State Capitol, New....	51
Testimonial for 672 Grease, A	82	New Dixon Pencil Numbers....	113
Timken Bearings in Mine Cars	124	New Goods	15
Trailers with Roller Bearings Speed up Handling Bales of Cotton, Heavy Duty. Norfolk Warehouse Corp.	86	New Jersey Act of 1923, Commercial Arbitration Under the	130
Window Displays:		New Nebraska State Capitol....	51
Crouch Hardware Company...	45	New Plant of the Metropolitan Supply Co. at Cedar Rapids, Iowa	53
Featherstone, Inc., E. A.....	28	Noble Deed, A	80
Lubricants at Booth of W. H. Brady & Co. at Calcutta Motor Show, Display of Dixon's....	104	Norfolk Warehouse Corp. Heavy Duty Trailers with Roller Bearings Speed Up Handling	
Lubrication Charts for Mack Trucks, Dixon	79	Bales of Cotton	86
Lubrication, Hydraulic Plunger Elevator	89	Notice, Important	82
Mack Trucks, Dixon Lubrication Charts for	79	Numbers, New Dixon Pencil....	113
Maintenance Cost of an Automobile, Good Grease is the Cheapest	32	Old Corner Bookstore, The....	137
Media Water Works	31	Only Reliable Products Can Be Continually Advertised	134
Meet Mr. Henderson	42	On Seeing the Harkness Memorial Tower Drawing, by Earl Horter with Dixon's ELDO-RADO, "the master drawing pencil"	27
Memorial Museum	75	On Time	111
Metals and the Care of Crucibles in Brass Foundry Practice, The Difference between Ferrous and Non-Ferrous	67, 91, 115	Out of the Earthquake—Safe!..	106
Methods of Applying Foundry		Paint in England, Dixon's Silica-Graphite	38
		Paint Service, Eighteen Years'..	129
		Paint, The Longevity of.....	7
		PAINT DEPARTMENT:	
		Armstrong Mfg. Co.	81
		Bridges:	
		Glen Mills Bridge.....	9
		Highway Bridge, Haverhill, Mass.	129

1923 GRAPHITE INDEX

Page	Page
Bridgeton Gas Company, The.....	117
California Packing Corp. Plant No. 5	21
Carolina Water Tanks, A Few.....	56
Car Protection, Tank	134
Central Arizona Light and Power Co.	90
Coke Drawing and Loading Machine, Covington Machine Company, Low Moore, Va... Covington Machine Company Low Moore, Va., Coke Drawing and Loading Mach- ine	23
Crack Liners of the Los An- geles Steamship Co.	30
Dixon's Silica-Graphite Paint in England	38
Eighteen Years' Paint Service.	129
Elevator Stacks, Grand Trunk Railway	140
England, Dixon's Silica-Graph- ite Paint in	38
Few Carolina Water Tanks, A.....	56
Gibbons Coal Company	94
Glen Mills Bridge	9
Grain Storage Tank, Schuylkill Flour Mills	142
Grand Trunk Railway, Elevator Stacks	140
Greenville City Water Works, Standpipes	57
Henderson, Meet Mr.	42
Historic Spot, A.....	46
Koenigs Mark Mill Co.....	143
Life Insurance Company	118
Longevity of Paint, The.....	7
Los Angeles Steamship Co., Crack Liners of the.....	30
Media Water Works	31
Meet Mr. Henderson	42
National Theater	119
Paint in England, Dixon's Silica-Graphite	38
Paint Service, Eighteen Years.	129
Paint, The Longevity of	7
Plant No. 5, California Packing Corp.	21
Protection, Tank Car	134
Pulaski Iron Co.	89
Schuylkill Flour Mills, Grain Storage Tank	142
Spot, A Historic	46
Stacks, Grand Trunk Railway Elevator	140
Standpipes, Greenville City Water Works	57
State Office Building, Rich- mond, Va.	95
Tank Car Protection	134
Tanks, A Few Carolina Water Tank, Schuylkill Flour Mills, Grain Storage	142
Theater, National	119
Water Works, Media	31
Paris, A Dixon Window in.....	100
Patrick & Co., Window Display	54
PENCIL DEPARTMENT:	
Another Prize Dixon Window.	139
Beautiful Window, A	128
"Best" Intention, Done with..	34
Dixonman's Hotel Sample Room Display, The.....	103
Dixon Pencil Window in Paris, A	100
Dixon Pencils in France.....	101
Done with "Best" Intention...	34
Eldorado Window Display....	62
Fine Window Display of Dixon Pencils, A	71
France, Dixon Pencils in.....	101
Guide Post.....	16, 40, 64, 111, 126
Harkness Memorial Tower drawing, by Earl Hortex with Dixon's ELDORADO, "the master drawing pencil," On Seeing the	27
Idea, A Window Display with an	111

1923 GRAPHITE INDEX

Page	Page
Metropolitan Supply Co. at Cedar Rapids, Iowa, New Plant of the 53	Gill Co., J. K. 110
New Dixon Pencil Numbers... 113	Harrison, J. W. 108
New Goods 15	Kistler Stat'y Co., W. H.... 109
New Plant of the Metropolitan Supply Co. at Cedar Rapids, Iowa 53	Patrick & Co. 54
Numbers, New Dixon Pencil.. 113	Pembroke Co. 128
Old Corner Bookstore, The... 137	Perkins & Co., Inc., Harry L. 109
On Seeing the Harkness Mem- orial Tower Drawing by Earl Horter with Dixon's ELDO- RADO, "the master drawing pencil" 27	Plimpton 41
Paris, A Dixon Window in... 100	Royal Ribbon & Carbon Co. 109
Patrick & Co. Window Display 54	Sohl's Stationery Store..... 108
Pencils in France, Dixon..... 101	Stanton & Wilson, O. B.... 62
Pencil Numbers, New Dixon.. 113	Stoll's 14, 108
Pencils, A Fine Window Dis- play of Dixon 71	Upham Co., Isaac..... 76
Pencil Week, 1923 107	Window in Paris, A Dixon Pencil 100
Plimpton 41	Pencils in France, Dixon 101
Sample Room Display, The Dixonman's Hotel 103	Pencil, The Indispensable Lead. 58
Stoll's Window Display 14	Pencils, A Fine Window Display of Dixon 71
Superb Window Display, A... 70	Pencil Numbers, New Dixon.... 113
Upham Company Window Dis- play, Isaac 77	Pencil Week, 1923..... 107
Week, 1923 Pencil 107	Pioneer Brass Works..... 104
Window, A Beautiful 128	Plant No. 5, California Packing Corp. 21
Window, Another Prize, Dixon 139	Plants of the Low Moor Iron Company 132, 133
Window Display, A Superb... 70	Plimpton 41
Window Display, Eldorado .. 62	Prayer, A Salesman's 139
Window Display of Dixon Pen- cils, A Fine 71	Production of Babbitt Metal.... 38
Window Display with an Idea, A 111	Products Can Be Continually Advertised, Only Reliable 134
Window Displays:	Proper and Improper Methods of Applying Foundry Facings.... 43
Bachrach & Son, M..... 108	Protection, Tank Car 134
Burrows Bros. Co..... 70	Pulaski Iron Company..... 89
Capitol Stationery Co..... 139	Quarter of a Century, A 10
Crocker Company, N. S..... 71	Ready, Around the World with Johnny 8
Garfunkel, France B..... 100	Records not Necessarily Lost, Charred Paper 128
	Safe! Out of the Earthquake.... 106
	Salesmen, Little Sermons to.... 127
	Salesmen, What is Wrong with the Manufacturer's 5
	Salesman's Prayer, A 139

1923 GRAPHITE INDEX

Page	Page		
Sample Room Display, The Dixonman's Hotel	103	Water Works, Media	31
Schuylkill Flour Mills, Grain Storage Tank	142	Weather, Indifference to	107
Selling, Confidence in	52	Week, 1923, Pencil	107
Sermons to Salesmen, Little....	127	What is Wrong with the Manufacturers' Salesmen?	5
Smith Passes Away, Alfred T....	77	Window, A Beautiful	128
Spot, A Historic	46	Window, Another Prize Dixon..	139
Stacks, Grand Trunk Railway Elevator	140	Window Display, A Superb....	70
Standardization of Scientific Symbols	116	Window Display, Eldorado	62
Standpipes, Greenville City Water Works	57	Window Display of Dixon Pensils, A fine	71
State Office Building, Richmond, Va.	95	Window Display with an Idea, A	111
Stoll's Window Display.....	14, 108		
Straw Houses in France.....	9		
Success	34		
Superb Window Display, A....	70		
Symbols, Standardization of Scientific	116		
Tank Car Protection	134		
Tanks, A Few Carolina Water..	56		
Tank, Schuylkill Flour Mills, Grain Storage	142		
Testimonial for 672 Grease, A... .	82		
Theater, National	119		
Time, On	111		
Timken Bearings in Mine Cars..	124		
Tragedies, Five	34		
Trailers with Roller Bearings Speed Up Handling Bales of Cotton, Heavy Duty, Norfolk Warehouse Corp.	86		
Upham Company Window Display, Isaac	77		
		Window Displays:	
		Bachrach & Son, M.....	108
		Burrows Bros. Co.	70
		Capitol Stationery Co.	139
		Crocker Company, H. S.....	71
		Crouch Hardware Co.....	45
		Featherstone, Inc., E. A.....	28
		Garfunkel, France B.....	100
		Gill Co., J. K.	110
		Harrison, J. W.	108
		Kistler Stat'y Co., W. H.....	108
		Patrick & Co.	54
		Pembroke Co.	128
		Perkins & Co., Inc., Harry L..	109
		Plimpton	41
		Royal Ribbon & Carbon Co...	109
		Sohl's Stationery Store	108
		Stanton & Wilson, O. B.....	62
		Stoll's	14, 108
		Upham Co., Isaac	76
		Window in Paris A Dixon Pencil	100
		Worship, Hero	40
		Wrong with the Manufacturers' Salesmen? What is	5

Graphite

VOL. XXV

JANUARY-FEBRUARY, 1923

NO. 1



JOSEPH DIXON CRUCIBLE CO.

ESTABLISHED
1827

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1868



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Volume XXV

JAN. - FEB., 1923

Number 1

THE GOTHIC CHURCH AT MEAUX

(See front cover: Drawing by Earl Horter,
with Dixon's ELDORADO, "the master
drawing pencil.")

Immensity	Along the Marne,
Flowering into grace . . .	All on the way
Magnificent	To famed Champagne,
While delicate . . .	Where foams the wine
A whispered prayer,	Of that fair land
A silent cry:	In which the builder lifted hand
Uplifted hands	And built a Monument
In ecstasy!	That stands alone,
A skyward march	Of age-defying, living, breathing stone.
From out a plain	

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Dudley A. Johnson

LATE MANAGER OF CHICAGO SALES DISTRICT

JT is with profound sorrow that we announce the death of Mr. Dudley A. Johnson, Friday, January 26th, 1923, at Miami, Florida. He had not been well for some time past and was at Miami in an endeavor to regain his health.

Mr. Johnson was born at New Albany, Indiana, in 1867. He moved to Chicago and secured a position with the stationery house of Brown, Pettibone & Kelly. In 1897 he resigned as Manager of the stationery department of that firm, to become Western representative of the Holyoke Envelope Company. The following year he formed a connection with the Dixon Company, taking

charge of the lead pencil and school work in the Chicago territory. Later he assumed charge of the crucible and graphite productions.

The introduction of liquid brazing in the bicycle trade was largely due to his efforts. Today this method is in use wherever bicycles are made.

At the time of his death, Mr. Johnson was in charge of the Chicago Sales District, having succeeded the late Sam Mayer at that time in 1914.

With the trade he was always popular and highly respected. Among his friends he was beloved and trusted. We all mourn his loss and extend our sincere sympathies to his widow and family.

What is Wrong With the Manufacturers' Salesmen?

**Ideas of Direct Interest and Value to Every
Manufacturer Who Has a Sales-Force**

By LOUIS BANKS

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I AM writing this article from ideas gathered during a long experience with good, bad, and indifferent salesmen that manufacturers of building materials have been sending around to my office. Some of these salesmen know their job thoroughly, but on the other hand there are a great number of them who *can* learn and *must* learn a great deal if they ever expect to sell their products to the architects.

One kind of talker who haunts my office is

The Negative Salesman

Let us take, for example, the representative from the metal-lath concern. He sends in his card, enters my office, and I start to ask him three questions: First, where has your product been used; second, what backing has your product; and, third, what is the cost in comparison with products of a like nature? Before these questions can be uttered the salesman tells me that his metal-lath does not rust. I weigh this statement carefully and assume that other metal-lath does rust. Along comes the second salesman from a competing manufacturer of metal-lath and says that his material does not sag. I begin to believe there is something wrong with metal-lath; some of it sags and some rusts—so I use plaster-board instead. These salesmen should not sell in a negative manner; better to tell the advantage of

the use of metal-lath in general, and then explain the costs of their particular brand and where it has been used and by what architects.

Once in a very great while a salesman offers along with his sales-talk a real idea that helps me in drawing up my plans. Excepting the client with a lot of money in his pockets, this genus homo is the most welcome person that enters my office, and he is the man who receives my business.

When to Call

I have often wondered why so many sales-managers send their salesmen around to the architect's office at the wrong time. A salesman coming into my office on the first day of every month soon becomes a bore. I am interested in a building material when I am working on a building in which I need that material, and I like to talk to a salesman when I am drawing up my specification sheet.

Once a salesman has received recognition of his product he should let his visits be far enough apart to act only as a reminder. On these visits he can well tell the architect about any news he has heard concerning other members of the profession, or about new buildings that are being considered for early construction. A salesman should keep in touch with publications and building reports and exhibitions, not only from the standpoint of actually selling his material but for the ac-

cumulation of facts that will enhance the value of his conversation with the architect and the architect's clients.

When the time is at hand, send a letter with an enclosed return postal to the architect, asking him whether or not your material has been included in the specifications. This is not a waste-basket letter, and the architect is always glad to say that a product will or will not be used.

A sales-manager ought to size up a prospect pretty thoroughly before he sends his man around to an office. He must know what is happening in the architect's office, and then he can judge when to call on that architect, and if his product is needed in the contemplated building. Obviously a salesman of church pews should not call on me if I am building a factory, yet this is often the case. The remedy, as I see it, is for the manufacturer to ascertain beforehand what buildings are being planned in the architects' offices and then, if his product is required in any part of the building, to have his salesmen call when specifications are being prepared.

A Brief Story and Its Follow-Up

There is more than one reason why salesmen become unwelcome to the architect. They may call at the right time with the right product, but it often happens that each of the salesmen have memorized points, and they tell them over and over again. A Cleveland architect once told me that "if they would keep all the salesmen out of his office he would use more of their product." Each salesman of a certain kind of material who called on him told practically the same story that the preceding salesman of a like product told, and each of them was persistent in telling his story. The architect in question explained fur-

ther that the eight or ten manufacturers of this material should combine in their efforts and supply their salesmen with a uniform and brief sales-story and with sales-literature that the salesmen could leave with the architect that would follow up their talk.

An architect likes a brief definite presentation of a material, and when he wants information he wants it quick. The sales-literature in the architect's file at once serves him with the data he requires and, if it is a follow-up of what the salesman has told him, he is going to remember the salesman and his story.

The Extent of the Salesmen

On an average of three or four salesmen call at my office every day when specifications are being written. The one that knows his product, has a good appearance, and places before me a material that I am directly interested in for my new building is the salesman who "gets the jump" on his competitors. When you realize that there are around 14,000 manufacturers of construction equipment in this country, and the great number of these are sending salesmen to about 6,000 architects' offices, you can see what an avalanche of salesmen are coming down on the architect's head.

Necessarily the "successful" salesman must be decidedly better than average. He must realize—and I believe this one of his most important assets—that the architect knows more about his product than he does himself. A book-agent sells books to people who don't read, but when it comes to selling books to experienced librarians he must change his tactics. The same thing is true of the architect. He is, above every one else, experienced in building material. A

salesman cannot go at him with the idea that "I am going to give this man a complete education on paint, gas-heaters, elevators, or a thousand-and-one other things."

There may be, though, an absolutely new product that the architect *does want to know about.*

Breaking in a New Product

I am always anxious to learn about some product that is new or "out of the beaten path" of ideas. The salesman should be thoroughly instructed in his new building material, so he can give the architect detailed and complete information. The most effective method the salesman and manufacturer have to show their confidence in a new product is to offer a *real guarantee* and to stand by that guarantee. This salesman must realize that he is breaking in on a new line and is pitted against old houses, but this is no hindrance to his product's acceptance. The architect is always a student and he is glad to learn the new ideas that turn up—and they are turning up every day.

Psychology of a Good Loser

Snap salesmanship like snap advertising is a thing of the past. There has to be personality and brains behind every sale that is made—not only personality in the salesman, but also in the sales-literature and in the advertising in the professional publications. Combined with this quality of personality, a salesman can sell an architect effectively, as I have brought out in this article, by calling at his office at the right time and with the right product, by offering him a real idea in as brief a manner as possible, and last of all by being a good loser. A salesman may concentrate for months to get a contract, and then discover with a few words that his

efforts are futile. The architect may have been well sold on the particular product, but his choice was influenced by the owner or circumstances beyond his control. At times he comes right up to writing the product into his specifications, and at the last minute he has to make changes for the sake of deliveries or convenience of handling. In this case the architect does not want the salesman to blame him. The salesman will have to call on this architect later on, and there is nothing that will hurt his chances more than complaining over the architect's choice of some other material. On the other hand, if he retains the architect's good-will and goes back at him the second time twice as hard, he will undoubtedly be successful.

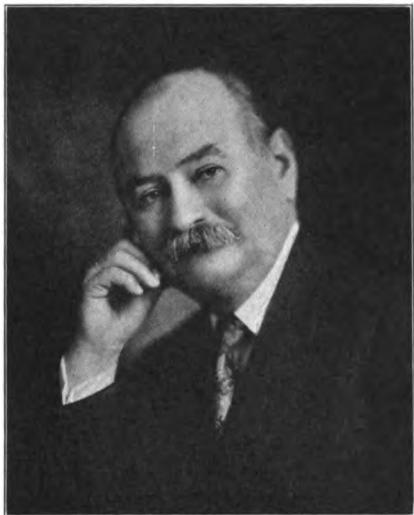


The Longevity of Paint

PAINT, like love, covereth a multitude of sins. Its uses have been legion, and the recent "discovery" by the British Food Investigation Board adds yet another to them. Germs contained in food enclosed in airtight tins are unable to develop or become dangerous until air enters the tin. They may then play the very deuce.

Tin becomes affected with a species of "plague," which is liable to attack the metal when exposed to low temperatures. Microscopic holes are then formed, and the development of microbic life commences under favorable conditions.

If the tin is properly painted it is immune from the plague, and it is on record that painted tins left in the Arctic regions in 1825 by the Parry expedition were opened 86 years later and the contents found to be in excellent condition. — *Decorators and Painters Magazine.*



"Around the World with Johnny Ready"

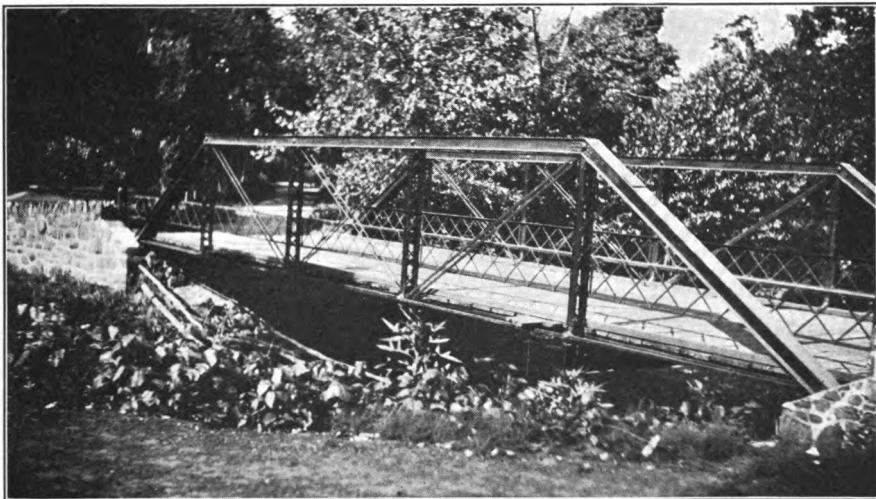
ON the passenger-list of the Cunard Steamship SAMARIA, bound from New York, January 24th, for a voyage around the entire world, there appears the name of the Dean of the Dixon Sales District Managers,—“John M. Ready, New York.” And that, with the appearance of this list, is written the brief introduction to another glowing and memory-filling adventure, is the belief and wish of his legion friends in the Stationery Trade and without it. To him they all say, young and old, “A good voyage, good friend: and speed the day of your safe return to us.”

Now, as we write, there is before us a book of gold and purple: on the cover of which there is a map: and on this map a line of gold traces the course of his pilgrimage. As we open the book, we see a picture. It is one that breathes the spirit of the im-memorial East, with its pagodas and processions; its luxury and enchant-

ments; its color and surprises. Page after page, and the panorama of delight unrolls. These scenes soon will have Mr. Ready as their interested spectator. How will he look on them, but with that same urbane eye which has seen so much of the world's splendors? And how will *he* look to these strange people as they gaze back at him? As their eyes envisage his helmeted head, his suit of linen white, his shoon the same, and eke his glittering, swinging cane,—how will the natives of these many lands accost our traveler?

We think with just the same old grace and ease he'll win new friends on all the seas. The dwellers in each sunny land will want to shake him by the hand; and if the hand will spread largesse, why, surely, they'll not think the less of him but more. We hear them crying out “Encore,” while gathering each unto his store. Around about the Taj Mahal, and on the Father River Nile, the day advances with a smile to see the form of Johnny Ready a-coming on, carefully and steady. With hands outstretched, palms upmost, the welcome grows from coast to coast. For Ready wit and Ready cash are sure to cut a cosmic dash. In fair Japan and old Malay, where flying fishes may (or may not) play, and maidens dancing in Rangoon, they sway them to this silvery tune. In China, too, they hear the chink, and Waikiki is shivering to its ring and plink-a-plink the ukeleles sing. And now the Golden Gate's at last agleam with hope and Panama is shouting “Rah.” The tale is told, and Johnny Ready, as of old, is back again in New York town, healthy (gracious sirs) and brown. He's

(Continued on page 9)



Glen Mills Bridge

Delaware County, Pennsylvania

LOWELL the poet might have sung "what is more beautiful than a bridge in Delaware County, in its beautiful Summer setting of flowers, trees, and brooks."

This and many other Delaware County bridges are painted with Dixon's Silica-Graphite Paint, it having been selected because of its long service records.

"Around the World with Johnny Ready"

(Continued from page 8)

drawn a circle round the earth. Perhaps, he now content will stay within his own dear U. S. A.

Along with Mr. Ready on the trip will be his warm personal friend, Mr. N. O. Edwards, formerly head of the New York Dock Company. He and Mr. Ready have known each other 40 years. They should make a good team to girdle the world together.

Straw Houses in France

Straw has long been used for roof construction in France and is now being pressed and molded into blocks of convenient sizes to take the place of masonry. The framing is intended to carry the loads, the compressed straw blocks being used to fill in the walls and partitions.

On account of the lightness of the construction heavy foundations are not required. A layer of bitumenized cardboard is placed between the foundation and the first course of straw blocks to prevent spread of dampness. Since straw is a poor conductor of heat, this type of house is cool in the summer and warm in the winter. It is necessary to place a perforated pipe between the foundation and first layer of blocks, through which toxic gases, such as sulphuric gases and formic aldehyde may be passed.

This style of house seems destined to be much used in agricultural communities where the usual materials are rare and should permit rapid reconstruction in the devastated regions.

Le Génie Civil

Graphite

PUBLISHED BI-MONTHLY BY THE
JOSEPH DIXON CRUCIBLE CO.

AT JERSEY CITY, NEW JERSEY, U. S. A.

*In the interests of Dixon's Graphite Pro-
ductions, including Crucibles, Lubricants,
Pencils, Paint, etc. Sent free upon request.*

Vol. XXV JAN.-FEB., 1923 No. 1

A Quarter of a Century

THIS is Volume XXV, No. 1, of GRAPHITE. It seems a long time ago, that first issue. It appeared during a time of great public excitement. The battle-cry of a nation was in the air: "Remember the Maine!" War with Spain was declared. The boys in khaki were entraining.

What convulsions of anger in peoples these twenty-five years have looked on! The Spanish War, the Boer War, the Russo-Japanese War, and, finally, the Great World War—not to mention other similar disturbances, smaller in extent, but waged with like intensity of destruction, even though on a smaller scale.

Twenty-five years ago the race of Captains of Finance of America was in its heyday. Most of them have now passed on—steel kings, financial giants, railroad magnates. Men of might, picturesque and successful. We see their works around us on all sides.

Twenty-five years ago the highways and byways were covered with bicycles. The automobile and aeroplane were still an inventor's dream. What achievements in transportation on land, on sea, in the air, these twenty-five years have gazed on!

What advances in lesser mechanical inventions! For the office alone,—the calculating machine, filing systems, dictating 'phones.

And the last wonder of the world
—radio!

In the history of the world there is no match for the last twenty-five years for achievements that stir the heart and mind of man.

And the pace is ever quickening.

Now, GRAPHITE during these busy years has appeared continuously. All the while it has been doing its little best: trying to serve the best interests of the times by comments, wise and otherwise, on the line of goods that Dixon makes: pencils, crucibles, paints, lubricants. We intend to keep it up,—for another quarter of a century, at least.

Our friends tell us we are looked for and liked, and that our influence is good to extend the sale of Dixon Graphite Products.

This is our mission,—and so it will continue to be as long as we continue to be. ◆

The Backward Glance

This backward glance we humbly throw,

As trudging on the way we go,
With happy heart, step spirited,
To where the Future waits, unheralded,

Prepared to fight thru weal or woe.
The Past shall teach us how to know

When swiftly we should pace, when slow.

And so we throw, ere Day be sped,
 This backward glance.

The deeds we might have done are dead:

They feed no vanity. Instead
They mock us from their bed below

Where pretense makes a sorry show:

'Twas shunned by those who've merited

 This backward glance.

DIXON'S 677

*For Transmission and
Differential Gears*

Cost more per pound but less per mile.

Makes gears run as they should—sweetly, quietly, shifting easily and silently in summer and winter, and delivering full engine power.

JOSEPH DIXON CRUCIBLE CO.

Jersey City, N. J.



Established 1827

MAKERS OF QUALITY LUBRICANTS

*For Spur and Bevel Gears Use Dixon's
Gear Lubricant No. 677*

*For Worm Drives Use Dixon's Gear
Oil No. 675*

*For Universal Joints Use
Dixon's Grease No. 672*



An extraordinary 5¢ pencil

We say "extraordinary" not only because the lead is so delightfully smooth and responsive, but because of the very shape of the pencil itself.

It is neither round nor hexagon, but a happy combination of the two. And a pencil's *shape* has much to do with ease and speed in writing—try a Ti-con-der-oga and see.

You'll say, "I have never had so fine a 5c pencil."

Price slightly higher west of Mississippi

DIXON
"TI-CON-DER-OGA"

JOSEPH DIXON CRUCIBLE COMPANY

Pencil Dept. 190-J, Jersey City, N. J.



Fort Ticonderoga, Eldorado pencil sketch by Mr. Earl Horter after restoration drawing by Mr. Alfred C. Bossom.





THIS reproduction shows that Trenton knows that when it comes to pencils, why, the Dixon School Line is the buy. The pencils in this fine display were seen by all, both night and day, who visited old Trenton Town during the week that came between Xmas and New Year's E'en. And while 'tis sure no frown could mar their full enjoyment who viewed the show while on the pavement, still those who went inside the door at Stoll's saw many other things to ponder o'er.

They saw a stall, well-organized and bright; they saw how quick and right each sale was handled. It was quite a treat to see so various a stock and wide, piled to ceiling on every side. Here were pads and pens and pencils, too, and everything to write

and draw on view. And here were photographic supplies; and bats and balls, and rods and flies, canoes and tents, to take their eyes. And over all a music variation, from an Edison Re-Creation, in the shop behind them all, where the jazz band has the call.

And last but certainly not least they saw a gentleman, alert and smiling, who went about the place beguiling each one he met with courtesy, still it seemed that courteous though he was, yet even more the man was able. This is he whose photograph is set within the picture. You can bet he well deserves his title. He is a General Manager worth while, and few have got his business style. His name is Stewart: his friends all call him "Will" or "Bill." He knows the "tricks" of store and mill. His

(Continued on page 16)

PENCIL DEPARTMENT

Bulletin 1 — New Goods

DIXON

"EDUCATOR" Crayons in new packings: B-8 T, 8 crayons, assorted colors, in metal, hinged lid box; B-8 L, 8 crayons, assorted colors, in lift-lid box of heavy cardboard; B-8 S, 8 crayons, assorted colors, in slide box of heavy cardboard.

"DUPLIGRAPH" Copying Pencils: 2076-Red; 2077-Blue; and 2078-Green; Vivid in color, smooth and enduring.

"ELDORADO" Pencils, hexagon, rubber tipped, 170-2B; 170-HB; 170-H; and 170-C 1 dozen rubber tipped on cards. Hundreds of dealers have been waiting for this pencil. Here it is!

"ELDORADO" Pencils, round, 190-2B; 190-HB; 190-F. These round "Eldorado" pencils are going strong from the word "go"—many people prefer a round master quality pencil.

"ELDORADO" Erasers: master quality, for artists, draftsmen, architects, engineers: Sizes 4, 8, 12, 16, 20, 24, 30, 40, 48, 60, 72 and 80. Packed in handsome blue and gold display boxes. A welcome addition to the "Eldorado" line of art materials.

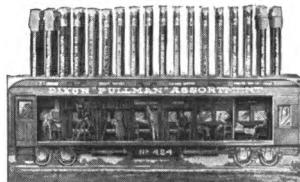


1183 "ELDORADO" Display—striking metal take-and-pay case, gold, blue and white, with rich mahogany base: Shows and sells 17 leads of ELDORADO—"the master drawing pencil," 3 leads "Eldorado" round pencils, and "Eldorado" rubber tipped pencils.

Dixon FLAT CRAYONS especially adapted for marking on leather, fabrics, etc., 931-Red, 932-Blue, 933-White, 934-Yellow and 935-Black. Packed one dozen in box, six boxes in carton.

No. 424 "PULLMAN" Assortment, containing $\frac{1}{2}$ gross assorted round and hexagon rubber tipped pencils.

No. 411 9-inch: Polished cedar finish, oval shape carpenters' pencil. Packed in dozens, $\frac{1}{2}$ gross to box.



Guide Post

SOMETIMES the road is as plain as the nose on your face.

Nonetheless, many stray over the hills and far away.

Take the pencil you use, for instance.

Is it a TI-CON-DER-OGA?

If it is, you are on the right road.



How delightfully smooth it is!

How easy work rolls along it.

Never a stick or a break,—effortless, almost.

What makes it so?

Ah,—the lead, of course.

Where have you ever seen its equal in a 5-cent pencil?

But this is an extraordinary 5-cent pencil.

For it's not only the lead that helps your hand, but the shape.

That shape is a happy combination of round and hexagon—rounded hexagon, you might say.

It confirms the "feel" of the lead,—makes the pencil "pleasing to your fingers."

Remember TI-CON-DER-OGA.

Tell your dealer that you are for TI-CON-DER-OGA the next time you want to buy a 5-cent pencil.

Remember TI-CON-DER-OGA,—AMERICA'S OWN 5-cent pencil.

On the center spread in this issue there is a reproduction of a lead pencil sketch of Fort Ticonderoga after the original restoration drawing by Mr. Alfred C. Bossom, one of the leading architects in New York City. Mr. Bossom is the restoration architect of this noted group of historical buildings. Possibly, one of these fine days we shall be able to delight the readers of GRAPHITE with the story of the fort, and the details of its reconstruction.

Stoll's

Continued from page 14

brain is working all the while behind that fine and manly smile. He is a friend of that rare ilk that's true as gold, as fine as silk. And saying this we make to him our bow,—and, spite of prohibition, cry, "Here's how!"

Since the foregoing was set in type, disaster in shape of a fire has overtaken the Stoll Store at Trenton. But sharply on its heels the work of reconstruction and re-organization has gone forward. At the same old stand, the Stoll Blank Book and Stationery Co. was up and doing business within a few days after fire had done its worst. Thus you have startling confirmation of our little story of this remarkable store and its still more remarkable general manager, Mr. Wm. N. Stewart.



MIGHT BE CALLED GOSSIP.—Mrs. Jameson—"Do you believe that awful story they tell about her?"

Mrs. Johnson—"Of course I do! What is it?"—*Kasper (Stockholm)*.



EXERCISE ASSURED.—Doctor Friend—"Now that you have a car, you mustn't neglect exercise."

Patient—"Oh, I sha'n't be able to; it's a second-hand car."—*London Opinion*.



AND how do we know it's "*the perfect eraser?*" Well, first of all, sir, it *will quickly erase* and clean off your paper, and leave not behind it a mark or a trace. And then it *is always quite soft* to the touch, reminding you much of a little babe's face. In it, you'll find, your full faith you can place, sir. And the name of it? Why, — Dixon's Eldorado Eraser!

Sizes: 4, 8, 12, 16, 20, 24,
30, 40, 48, 60, 72, and 80

Packing: *Striking gold, blue and white display boxes*



Since 1827

When Joseph Dixon made the first successful "black lead" crucible, Dixon Crucibles have maintained a standard of efficiency and quality that has kept them in the lead. The accumulated knowledge of nearly a century of crucible manufacture is woven into the walls of every Dixon Crucible.

DIXON CRUCIBLES

Satisfactory crucible service for every metallurgical requirement is assured when DIXON'S are used.

Large or small, DIXON CRUCIBLES are uniform in composition, construction and performance. You can rely on them because the experience gained through ninety-two years of crucible-making stands back of every one.

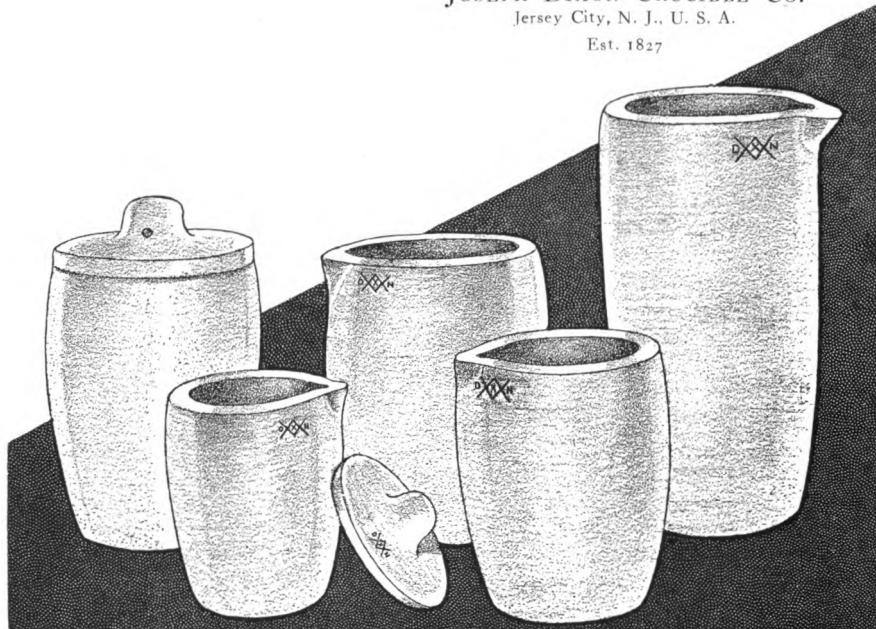
There need be no worry about crucible trouble in the middle of a melting operation if the crucible you use bears the name DIXON.

Write for Booklet No. 190-A

JOSEPH DIXON CRUCIBLE CO.

Jersey City, N. J., U. S. A.

Est. 1827



Foundry Facings

By E. J. MALLON

IT is the purpose of the author to point out to the trade in general some of the uses and misuses of this much abused foundry necessity. The experience gained by actual contact with the trade for the past twenty years, during part of the time as a manufacturer of facings, indicates that facings are unjustly blamed for many of the troubles that occur in ordinary foundry practices. It is right to blame facings when they are at fault, but they should not be held responsible for all the mistakes resulting from the slipshod methods that prevail in numerous foundries. In an endeavor to throw a little light on the subject, let me direct a few remarks to the foundry foremen, because it is to them that employers look for results—for the correction of errors and the introduction of economies.

Having been a foreman myself for the last fourteen years, I know whereof I speak when I say that it is a quite general fault of foremen and molders to make the facing a scapegoat for their inability to produce good castings. I do not say that poor castings are *always* attributed to the facings, but it is a fact that in many instances failures are laid to the facing instead of searching for the real cause. Facings of inferior quality are being used in some foundries because the initial cost is low, and as might be expected, a lot of castings are spoiled on this account. No fair minded person, however, would condemn the facings alone.

It is for the benefit of such foundries that I have prepared this article, and the one to follow, which will deal with "Proper and Improper Methods of Applying Foundry Facings." In these articles I have tried to cover the subject from all angles, in the hope that some of the suggestions may be helpful to the firm, the foremen and the molders.

The fundamental reason for using a facing on a mold is to overcome the erosive and burning action of molten metal on the surface of the mold and to prevent the sand fusing at the points of contact. Good foundry facings should and do possess the following five desirable qualities. A facing in which all five are combined is a good facing, no matter from what source it is procured. Taking them in what seems to me to be the order of relative importance, they are,

Non-Fusibility
Adhesiveness
Slicking Powers
Porosity
Skin Color given to Castings.

1st—Non-Fusibility is placed as the first requirement for the reason that the other four points are dependent to a greater or lesser extent (according to size of casting) upon the degree to which this characteristic is possessed by the facing. A facing that contains the proper proportion of carbon in the form of finely ground graphite will be highly infusible and will therefore protect the surfaces of the mold upon which it is used from being eroded or burned by the molten metal that comes in contact with it, provided, of course, that the facing has been properly applied. Inferior facings that do not have a sufficiently high carbon content or are adulterated with cheap materials having a low fusion point, fail in the first essential—non-fusibility.

2nd—Adhesiveness is the property that causes facing to stick to a mold when a casting is poured instead of being washed off by the hot liquid metal. Finely ground graphite of good quality with the admixture of a small amount of highly refractory clay to act as a bond, makes an ideal coating for green sand work when rubbed in, painted on or shaken on. For dry sand or loam work the addition of molasses water or some glutinous substance to the facing will hold it in place while the mold is being baked and when the metal is poured. Adulterants are permissible in facings if they do not detract from the fusibility or other necessary characteristics. Some adulterants affect the facing but slightly, if at all. Others may be added to improve a facing in one respect, but unfortunately lower its quality in some other respect. Such substances are a detriment and should not be used. Frequently the binder has a low fusion point thereby defeating the primary object for which facing is intended, namely to prevent the molten metal coming in contact with the sand of the mold.

It will be noted that the feature of non-fusibility is stressed, for the reason that if a facing fails in this respect extra labor is required to clean the castings. Castings with sand burned into the surfaces that are to be machined are not only severe

on cutting tools but do not look well. It does not pay to employ labor to chip and clean sandy castings, when a better looking job can be produced less expensively by using facing that costs only a cent or two per pound more than ordinary brands.

3rd—Slicking will be dealt with at greater length later. However, in passing it might be well to state that a facing which cannot be "rubbed in" should not be used, except possibly on light work, sometimes called "bag facing" work. The molds in such cases being small or of thin section are not subjected to the washing action of the metal or to a high temperature for any great length of time, because the mold fills so rapidly and the metal cools so quickly that facings of low carbon content can be used without serious results. But bear in mind that "bag facing" on account of its low percentage of graphite is to be used only upon this class of work. Good facings can be trowelled or slicked, and will not stick to the tool or hand.

4th—Porosity. When a mold is being filled with molten metal the air and gas contained in that mold must be forced out to make room for the metal, and the principal means of exit is through the walls of the mold itself. Now if you should apply a dense, non-porous coating to the surface of a mold the gases liberated by the metal would be held within the mold. The gas is under pressure and in trying to escape would cause the mold to "blow" at certain spots. Castings obtained under such conditions are usually a total loss except for the salvage value of the metal. A good facing must necessarily have a certain amount of porosity, which is generally attained by the judicious addition of silica by the facing manufacturer.

5th—Color of Castings is considered by some authorities as a prime requisite. Its relative importance is a matter of opinion. I have placed it last for this reason: Every foundryman knows the color his castings should have and failing to have that color (bluish gray) he can feel assured that his facings are not what they should be, and he can be pretty certain that they are too low in carbon. The color of castings should be the last point to consider because if the facing fails in any of the foregoing points the casting will in all probability never be viewed by the purchaser. It will most likely be a subject for the "drop." It is evident that

the color of castings is automatically taken care of by the preceding four points.

In summing up the desirable characteristics we find that each is interdependent upon the others. In order to have a good facing all the points mentioned must be present. Gratifying results will be obtained with any good facing that is properly applied. Poor results will be obtained with poor facings, and even with good facings that are misused. The only real test for any facing is to use it under ordinary foundry conditions. No laboratory test, either microscopic or chemical, can determine accurately the nature or proportion of the adulterants in a facing, nor will it determine how the facing will function in actual practice. Each manufacturer has his own formulas which it would not be good business for him to divulge. A facing must be used on several molds of various sections and sizes in order to give it a fair trial in comparison with the facing you have been using. Tests are governed by numerous conditions each of which presents a problem to the individual foundryman. In this day of competition, of high prices of material and labor every foreman should understand the underlying principles of his profession, and be able to control materials and men in a way to produce castings at the lowest figure that is consistent with quality. These conditions and practices will be dealt with in the next article.



SEA AIR VS. MOUNTAIN DEW.—
Mother—"I wish that the papers would quit writing about these mountain moonshiners."

Daughter—"Why, mother?"

Mother—"Because I want father to take us to the seashore this summer."—*Burr.*



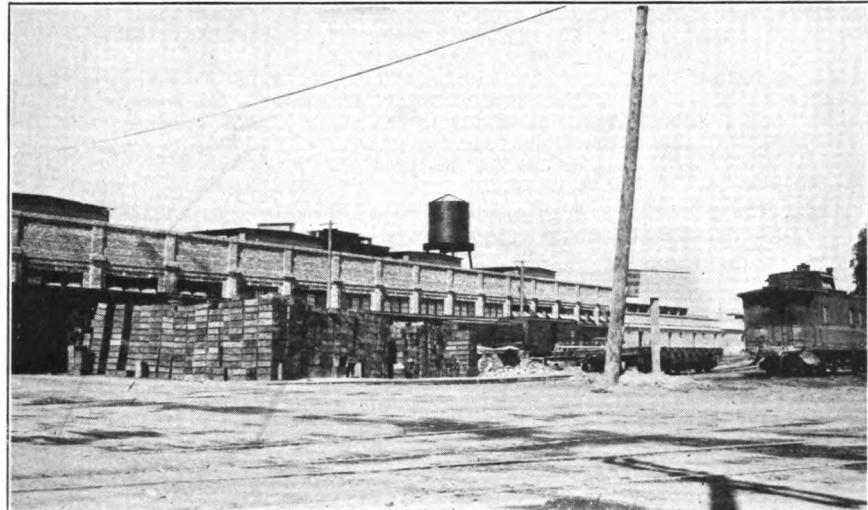
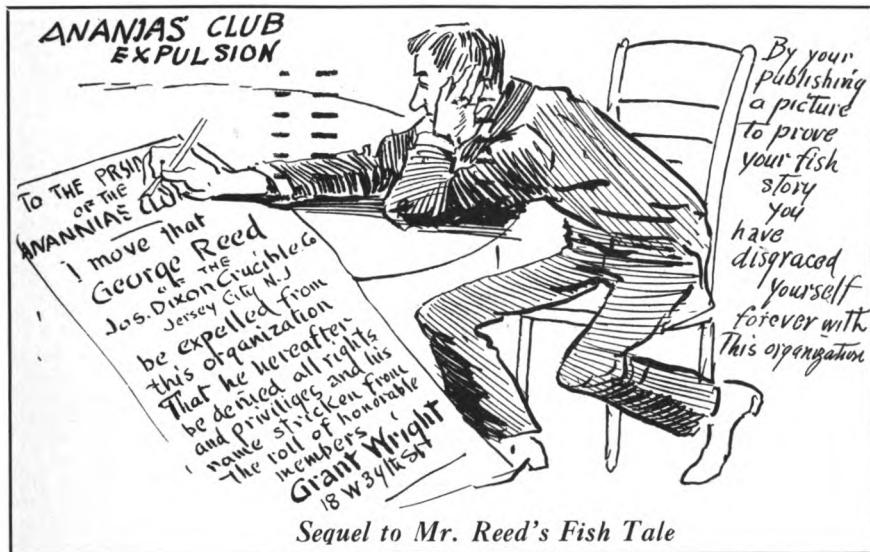
How to Do It.—"A sixty-dollar hat?"

"Yes."

"My husband wouldn't buy me a sixty-dollar hat."

"He would if you started to yell for a grand piano."

—*Louisville Courier-Journal.*



Plant No. 5, California Packing Corp.

Santa Rosa, Calif.

THE water tank and metal holdings of this large fruit-packing plant are painted with Dixon's Silica-Graphite Paint.

California products and climate are the best, and Californians want the best paint service on their buildings; hence the popularity of Dixon's Silica-Graphite Paint.

PHILADELPHIA
300 CHESTNUT STREET
NEW YORK
200 FIFTH AVENUE
BOSTON
30 STATE STREET
CHICAGO
100 SO. LA SALLE STREET
CLEVELAND
308 EUCLID AVENUE

N·W·AYER & SON

ADVERTISING
HEADQUARTERS

PHILADELPHIA

December 29, 1922.

GWC-G

*A testimonial,
part excellence!*

Joseph Dixon Crucible Company,
Jersey City,
New Jersey.

Gentlemen:

You will be interested to know, I am sure, that we are now using Dixon's "BEST" Colored Pencils exclusively in our Art Department.

Mr. Arthur W. Munn, our Art Director, tells me it is a case of sheer merit.

The range of colors is better - the pencils do not break as easily as the paper pencils formerly used - the Dixon Gray, particularly, is the only true gray some of the artists have ever found.

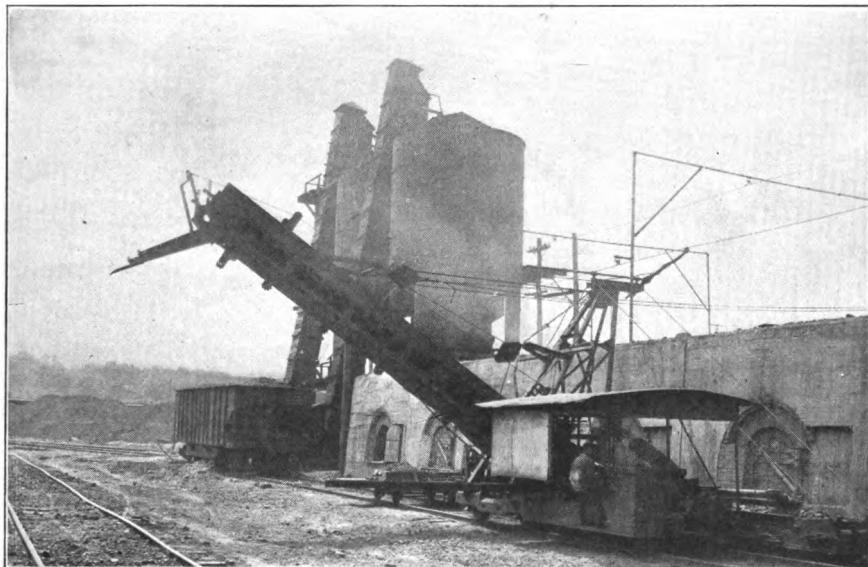
This should be good news to everyone having anything to do with the sale of these Colored Pencils.

Very truly yours,



For N. W. Ayer & Son.





Coke Drawing and Loading Machine COVINGTON MACHINE COMPANY, LOW MOOR, VA.

Painted with Dixon's Silica-Graphite Paint

THE following letter gives a world of authority and valuable information and we are most happy to reproduce it in the interest of scientific knowledge and national economy.

**COVINGTON MACHINE CO. INC.,
Covington, Va.**

"Referring to our conversation concerning Dixon's Silica - Graphite Paint. We use it on structural steel work and other places. The Photograph shows one of the "Covington" Coke Drawing and Loading Machines in use at Low Moor, Va., painted with Dixon's Silica-Graphite Paint. This is extremely hard service for any paint to withstand, as it not only has the action of elements to contend with, but in addition is subjected to considerable heat and gases from the burning coal.

We have tried a great many brands of paint and find that Dixon's Silica-Graphite Paint stands our conditions for this class of work much better than anything we have tried so far."

(Signed) E. H. ARCHER,
Manager.

◆
EVERYBODY'S DOING IT.—Lots of folks that laugh because it takes 5,000,000 rubles to buy a pair of shoes in Russia are saving cigar coupons over here to get a grand piano.—*Life.*

◆
SING SINGERS.—Teacher (to class in Natural History)—"What kind of birds are frequently kept in captivity?"

Tommy—"Jail birds."—*Christian Sun.*



HERE is but one master drawing pencil. Some day you will try it, and then, forever after, one name will come quickly to your mind when you think of the best pencil you have ever used . . . And that name is Dixon's Eldorado.

JOSEPH DIXON CRUCIBLE COMPANY

Pencil Dept., 190-J, Jersey City, N. J.

Canadian Distributors:
A. R. MacDougall & Co., Ltd., Toronto

Graphite

VOL. XXV

MARCH-APRIL, 1923

NO. 2



JOSEPH DIXON CRUCIBLE CO.

**ESTABLISHED
1827**

JERSEY CITY, N.J., U.S.A.

**INCORPORATED
1868**



Miners, Importers and Manufacturers of Graphite, Plumbago, Black Lead



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New York, San Francisco, Chicago, Philadelphia, Boston, St. Louis, Buffalo

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PENCIL DEPT. PRODUCTS

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Montreal, Quebec

Graphite

A MAGAZINE PUBLISHED BY THE
JOSEPH DIXON CRUCIBLE COMPANY

AT JERSEY CITY, N. J.
U. S. A.

Volume XXV

MAR.-APRIL, 1923

Number 2

On Seeing the Harkness Memorial Tower Drawing—by Earl Horter with Dixon's ELDORADO, "the master drawing pencil."

THIS is a very tiny song
To praise a mighty thing!
(Like a chirping katydid
To the shining moon a-swing.

But each one hath his excel-
lence,
That suiteth him full well:
This one builds big, and that
sings small—
And both a story tell.)

I wonder if the architect
Who planned this lofty pile,
If he were asked to write a song,
I wonder, Would he smile?

And it shall stir, from morn
till eve,

The crowds below that throng,
Like the memory-moving music
Of an ancient, gallant song.

And yet I think he'd be the one
To write a proper song,
For in him is a power
For which all poets long.

For Beauty whispers at his ear
His brain a Vision fills,
Harmonious, glad, inspiring,
As are the tree-clad hills.

Stone, steel and wood in his
skilled hands
Are words with which to raise
A poem that shall fill the air
With silent, lasting praise.



Dixon Display E. A. Featherstone, Inc.

Los Angeles, Calif.

THE above display of Dixon Products appeared in the window of E. A. Featherstone, Inc., Los Angeles, Calif. They are wholesale dealers only of motor car supplies.

As usual, the Dixon Gear Case formed the center of attraction and reports from the Coast tell us that it created a great deal of attention and comment which will be later visible in the way of increased sales of Dixon's 677. The rest of the window was attractively trimmed with cans and posters.

This is the kind of work the Dixon Sales Organization is doing for dealers and wholesalers over the entire country. We are glad to arrange for such displays of our products at any time and furnish dealers with such material.

The value of window displays for retail dealers is self-evident but here is a case where the wholesaler, not in a position to sell the general public, puts in a display from which his customers will benefit as well as himself.

Locked in Second Gear for 450 Miles

SOME record for a car and some record for the lubricants used in it! The car was a Lexington stock touring car and the lubricant used in the transmission and differential was Dixon's 677, while Dixon's Cup Grease was used in the wheels.

On page 29 appears a letter from the LEXINGTON LOS ANGELES COMPANY and a photograph of this car just as it was ready to leave the distributor's place in Hollywood. The letter tells the story better than we could ourselves.

We feel proud to be a contributor to such a record and the excellence of our product, 677, is more than justified. It is more than coincident that practically every American record for speed or endurance has been made with 677 in the transmission and differential of the cars making such records. It is due entirely to the fact that 677 is the best lubricant obtainable for the purpose.

Not only for racing, but for practical, every-day driving, Dixon's 677 will stand up and in this same way

(Continued on page 42)



W.F.S.B.

Saturday
February
3, 1923

Joseph Dixon Crucible Co.,
Jersey City, N.J.

Gentlemen:

You will be interested, we feel sure, in knowing that we used Dixon's Lubricant #677 in both the transmission and differential, and your Cup Grease in the wheels of our Lexington touring car, which we recently sent over the road from Los Angeles to San Francisco, locked in second gear, in the remarkable short time of 15 hours and 50 minutes.

We are handing you, herewith, photograph of the car ready to leave the Lexington distributor's place of business in Hollywood.

Needless to say, we feel that the excellent lubrication of the parts in which we used your lubricants contributed no small amount to the success of the run, and we are particularly pleased to say that after completing the run all parts in which your lubricants were used were found to be in first class condition.

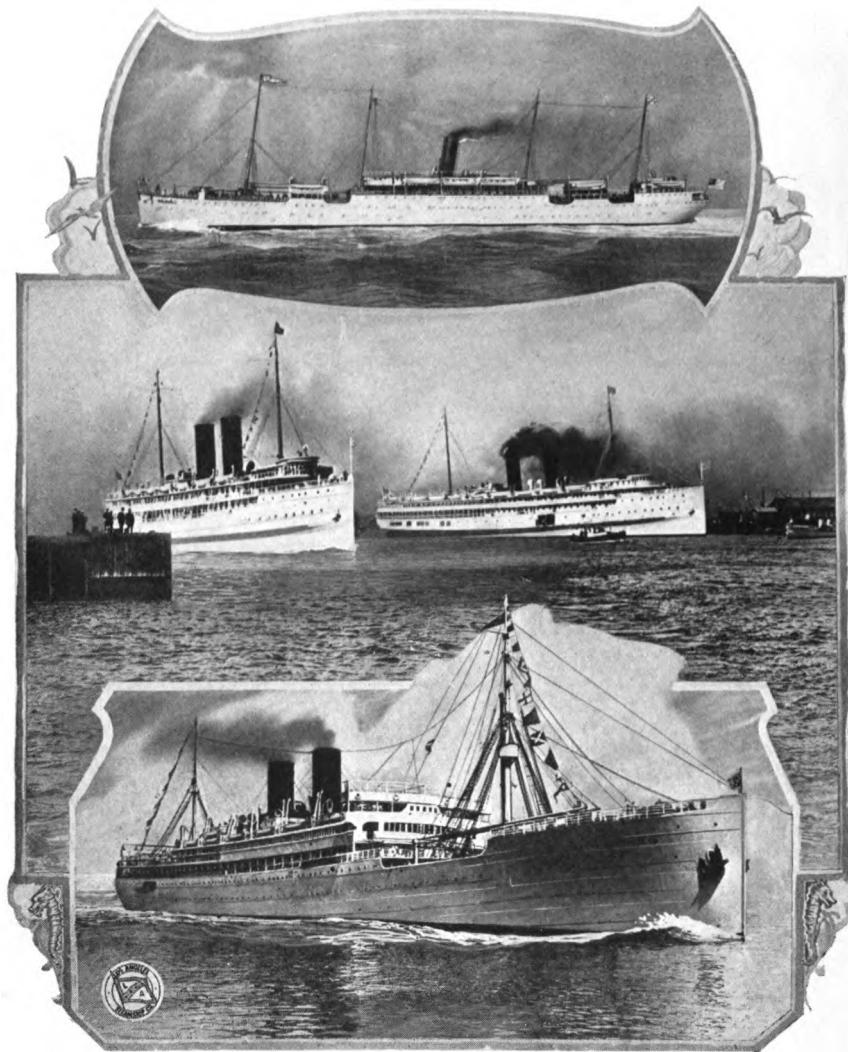
Very respectfully,

LEXINGTON LOS ANGELES COMPANY.

W.F. Seel, Secy. & Treas.

CALL 210-73 OR 210-06





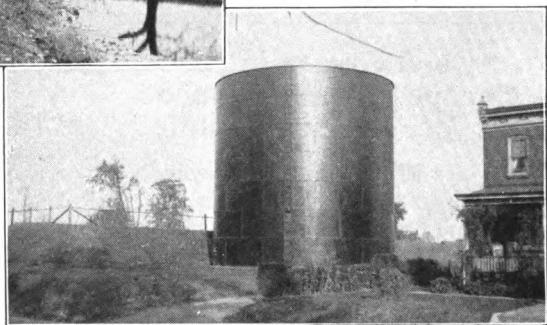
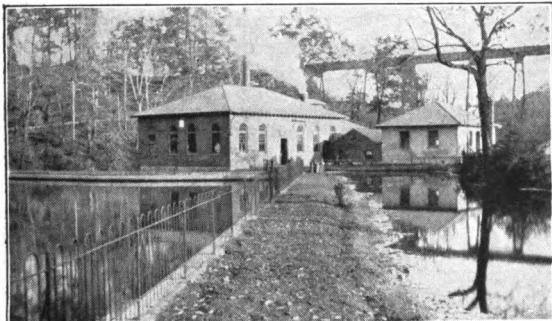
Crack Liners of the Los Angeles Steamship Co.

THE four liners shown above are operated by the Los Angeles Steamship Company out of Los Angeles. The upper vessel, the Calawaiii, purchased from the government, and the lower vessel, the U. S. Shipping Board vessel, City of Los Angeles, are operated in the Los Angeles—Honolulu service. The two vessels

shown in the center, Yale and Harvard, are popular coastwise liners plying between California ports.

During the Great War, the latter two operated between French and English ports as troop transports when more than 400,000 soldiers were carried without a mishap.

(Continued on page 32)



Media Water Works Media, Penna.

THE illustration on the left shows the reservoir and filter station of the Media Water Works. The pumps, iron fence, filters, are all protected with Dixon's Silica-Graphite Paint.

The other illustration shows the standpipe which is also painted with Dixon's Silica-Graphite Paint. Ask Superintendent Minton how well it has served at his plant. He knows, and his judgment and word are worth much in the water field.

The ingredients of Dixon's Paint, silica and flake graphite cling tenaciously and resist dampness—a much desired quality in a paint to be used about water works. The vehicle is pure boiled linseed oil.

Dixon's Silica-Graphite Paint has been made for over fifty years in First Quality only. Write for records of long service.

Cuppet Motor Company Clarksburg, W. Va.

February 15, 1923.

JOSEPH DIXON CRUCIBLE Co.,
Jersey City, N. J.

Gentlemen:—Replying to your inquiry relative to our success with Dixon's Grease, beg to say that we have been using it for about four years and have found it equally satisfactory on the different makes of cars and trucks we handle.

We have found nothing equal to Dixon's Gear Lubricant No. 677 for Republic Truck differentials and transmissions and have found it equally good in Ruggles Trucks and Moon cars, in fact we use it exclusively for transmissions and differentials.

Very truly,
CUPPET MOTOR COMPANY,
(Signed) O. RAY CUPPET,
ORC-MW Manager.



"Good Grease Is the Cheapest Maintenance Cost of an Automobile"

SO says Mr. W. Ray Montgomery of Montgomery Bros., San Francisco, and bears out our statements. But Mr. Montgomery's letter is complete and tells the story better than we could.

"To help you prove the well-known statement that 'good grease is the cheapest maintenance cost of an automobile,' I feel it is only fair to you to write of the experience I have had with my car that I am today trading in on a new one.

"The above-mentioned car is a 1912 Model AA Stevens-Duryea which we have run every day, or practically every day since it was purchased and which as near as we can estimate has run 378,000 miles.

"With the exception of the grease that it left the factory with, we have used nothing but Dixon's 677 in the transmission and differential and Dixon's Cup Grease in all grease cups, including the universal joints.

"It might further interest you to know that the original equipment of the differential and transmission are still intact and have never been taken out or repaired and are running as good as the first miles the car was driven.

"We assure you that in our new

car we will use only Dixon's Graphite Products, owing to the remarkable performance of the car we are trading in."

The car mentioned in Mr. Montgomery's letter is shown in the above illustration and looks good for many miles more. Other users of Dixon's 677 can testify in the same way, and it would pay you to investigate the merits of 677 and use it in your own car.



Crack Liners of the Los Angeles Steamship Co.

(Continued from page 30)

In reconditioning these vessels for peacetime service, Dixon Products were used. The vessels are painted white above the water line and the smokestacks are painted with Dixon's Silica-Graphite Paint—black color.

With the exception of the Harvard, all of the vessels were reconditioned at the plant of the Los Angeles Shipbuilding & Drydock Corporation, which organization built thirty-five freighters during the war. This plant also uses Dixon's products.

There are many places about a ship where Dixon's Products may be used to great advantage. Of course every engineer is acquainted with the old standby, Dixon's Ticonderoga Flake Graphite. No engine room is complete without a can. Then there are other products such as waterproof grease for winches and derricks and other heavy machinery. While last but not least, comes Dixon's Paint—an ideal protector of all exposed metal or wood work above the water line.

Other shipbuilding concerns will be interested in facts about the use of Dixon's Graphite Products either on board or in their plants. We are always glad to answer your problems.

DIXON'S SILICA-GRAPHITE PAINT

has been on the market for over 50 years and is made in FIRST QUALITY only. The pigment is Nature's own mixture of flake graphite and silica while the vehicle is the best boiled linseed oil obtainable.

Dixon's Silica-Graphite Paint is immune from attacks by acids, alkalies, gases and fumes. Impervious to water and not affected by heat or cold.

It dries into a smooth, elastic surface and lasts for surprisingly long periods of time, records running from 5 to 15 years on various metal and wood surfaces.

Dixon's is a paint in which the flake graphite and silica are *naturally* and not artificially combined, and this feature is essential to long life, efficient surface protection, elasticity and resistance to dampness.

Write for Booklet No. 190 B. and see how it will lower your paint costs.

JOSEPH DIXON CRUCIBLE COMPANY
JERSEY CITY **NEW JERSEY**



Established 1827



Graphite

PUBLISHED BI-MONTHLY BY THE
JOSEPH DIXON CRUCIBLE CO.

AT JERSEY CITY, NEW JERSEY, U. S. A.

*In the interests of Dixon's Graphite Pro-
ductions, including Crucibles, Lubricants,
Pencils, Paint, etc. Sent free upon request.*

Vol. XXV MAR.-APRIL, 1923 No. 2

Success

A SUCCESSFUL man is one who has tried, not cried; who has worked, not dodged; who has shoudered responsibility, not evaded it; who has gotten under the burden, not merely stood off, looking on giving advice and philosophizing on the situation. The result of a man's work is not the measure of success. To go down with the ship in storm and tempest is better than to paddle away to Paradise in an Orthodox canoe. To have worked is to have succeeded —we leave the results to time. Life is too short to gather the Harvest—we can only sow.—*Hubbard.*

◆ Five Tragedies

A man struck a match to see if the gasoline tank in his automobile was empty. It wasn't.

A man patted a strange bull dog on the head to see if the critter was affectionate. It wasn't.

A man speeded up to see if he could beat the train to the crossing. He couldn't.

A man touched a trolley wire to see if it was charged. It was.

A man cut out his advertising to see if he could save money. He didn't.
—*Business.*



Done with "Best" Intention

This gentleman with the
Wide and winning smile
Has traveled over land and sea
Many a weary mile.

We are glad to meet and greet him
In his quite expansive hat,
With his cigareet a burnin'
And his air of standing pat.

His name is short and snappy,
It gets off like a shot,
He hails from far Australia,
Where they call him Mr. Bott.

Our Australian Representative,
Mr. William Lewis, of Sydney, sends us this sketch, done with Dixon's
"BEST" Colored Pencils, and said to be a "speakin' likeness" of Mr. Charles Bott, Mr. Lewis' representative in Melbourne.

DIXON'S 677

*For Transmission and
Differential Gears*

- Makes gears run smoothly, sweetly, quietly.
- Permits gears to shift easily and silently, winter and summer.
- Cuts down power-loss in the gear-boxes.
- Lowers the cost of upkeep.

JOSEPH DIXON CRUCIBLE CO.

Jersey City, N. J.



Established 1827

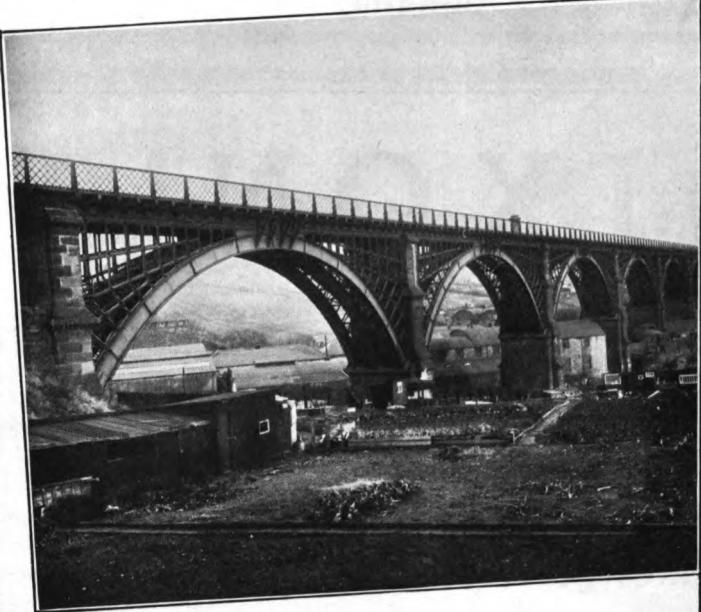
MAKERS OF QUALITY LUBRICANTS

*For Spur and Bevel Gears
Use Dixon's Gear Lubricant
No. 677*

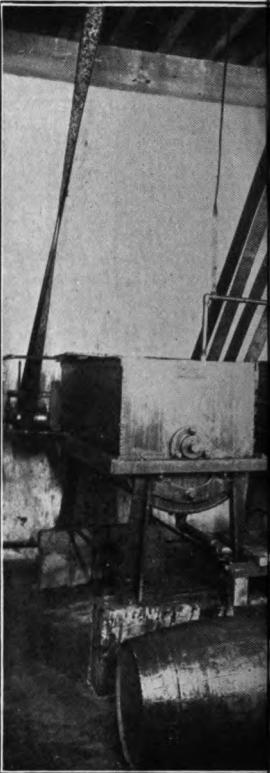
*For Worm Drives Use Dixon's
Gear Oil No. 675*

*For Universal Joints Use
Dixon's Grease No. 672*

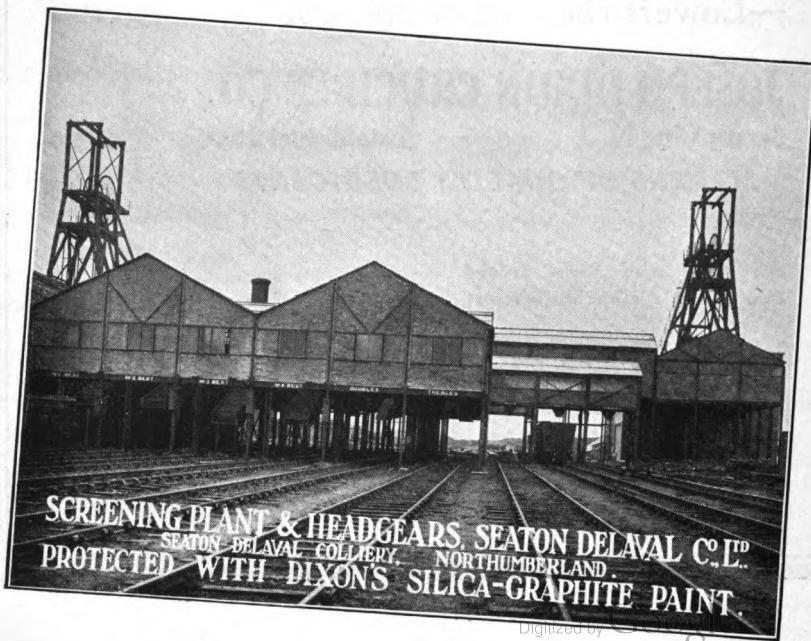




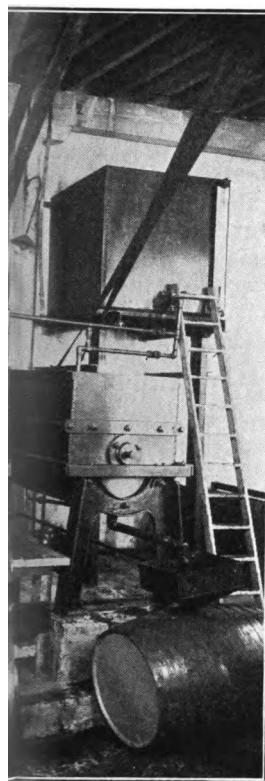
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NORTONS (TIVIDALE) LTD., HECLA WORKS, TIPTON, ENGLAND
PROTECTED WITH DIXON'S SILICA-GRAPHITE PAINT.

Digitized by Google

Dixon's Silica-Graphite Paint in England

THE center spread of this issue of GRAPHITE shows several structures located in England and which are protected with Dixon's Paint. It also shows a portion of our warehouse and paint-mixing plant. In detail they are as follows:

- A. Screening Plant & Headgears, Seaton Delaval Co., Ltd., Northumberland.
- B. Section of Dixon Paint Mixing Plant.
- C. Norton's (Tividale), Ltd., Hecla Works, Tipton, England.
- D. Willington Dene Viaduct, North Eastern Ry., Newcastle-on-Tyne.
- E. Central part of Dixon warehouse, 22 Duke Street, Stamford Street, London, SE1.

Under the able direction of Mr. C. R. Averill, our representative in England, Dixon's Silica-Graphite Paint is making a name for itself as a protective paint. In order to facilitate deliveries to our customers there a mixing plant for paint has been established. (See photo B.)

The Dixon warehouse in London is admirably suited for distribution of goods in the London area as it lies on the south side of the river, between Waterloo Bridge and Blackfriars Bridge and within 15 minutes walk of several railway stations. The warehouse has approximately 6,000 square feet of floor space and is roomy, well lighted and well adapted for the purpose.

The plant shown in photograph A represents the most modern development in screening and handling coal. It was designed, constructed and erected by Messrs. Norton (Tividale), Ltd. The weight of the steel

work and machinery is about 500 tons.

The plant of Nortons (Tividale), Ltd., shown in photograph C shows the interior of one of their shops. They number four in all and are 600 feet long. Nortons (Tividale), Ltd., are colliery and Constructional Engineers.

Photo D shows the Willington Dene Viaduct of the North Eastern Ry. at Newcastle-on-Tyne. The underside of the decking, girders and lattice work are all protected with Dixon's Paint. It was painted in 1913 with two coats and is today still in good condition.

Production of Babbitt Metal

THE Department of Commerce announces that, according to reports made to the Bureau of the Census, the value of products of establishments engaged primarily in the manufacture of Babbitt metal and solder amounted to \$26,255,000 in 1921 as compared with \$59,017,000 in 1919, and \$19,180,000 in 1914. In addition, establishments manufacturing other products of chief value reported Babbitt metal and solder to the value of \$8,482,000 in 1919, and \$3,538,000 in 1914.

Of the 98 establishments reporting products valued at \$5,000 or more in 1921, 22 were located in New York; 13 in Pennsylvania; 11 in Illinois; 8 in New Jersey; 6 in Ohio; 5 each in Massachusetts, Michigan, and Missouri; 4 in California; 3 in Virginia; 2 each in Colorado, Connecticut, Maryland, Oregon, and Washington; and 1 each in Georgia, Indiana, Minnesota, Nebraska, Tennessee, and Wisconsin. Illinois, the leading state in the industry in 1921, reported 36.7 per cent. of the total value of products in that year.—*American Machinist.*

DIXON'S ELDORADO ERASERS

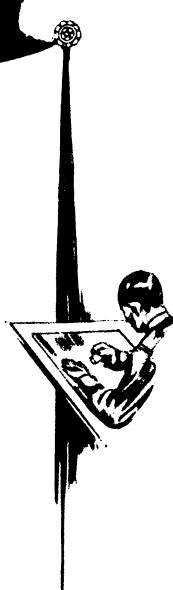


A special NEW eraser
for artists and draftsmen

SOFT—PLIABLE—yet firm enough
to do the job without crumbling into
aggravating little bits.

Keeps its softness indefinitely.
Doesn't absorb dirt. Absolutely free
from grit. When you try it, you'll
say it's a mighty fine eraser—a
worthy partner of Dixon's ELDO-
RADO, "the master drawing pencil."

JOSEPH DIXON CRUCIBLE COMPANY
Pencil Dept., 190-J, Jersey City, N. J.



Guide Post



THE Guide Post speaks—a various tongue; wears — a curious livery; is at home—in many lands; and eats—strangely assorted dishes.

A voice from Tokio speaks. For your behoof we translate into serene English its message. Thus:

Translation

Used for drafting, cutting, drawing Square Crayon Made by Dixon Co. of U. S. A.

and designing. With it can be drawn large or small lines on paper, board, cloth or stone, and it is handy to carry with one.

Special Sales Agency

Our good friends, T. Echizenya Co., have published this poster to tell the Nipponese about Dixon's Tailor Crayons. These are coming into their own with a vengeance! What was yesterday a comparatively unimportant item in the line is pushing its conquests to the bounds of the earth.

Faint not, Brave Heart, but fight on . . . the Victory is to the Persistent.



Hero Worship

I knew a little 'ero once,
His 'air was bright and curly,
His eyes were blue as Summer skies,
'Is bloomin' teeth were pearly.

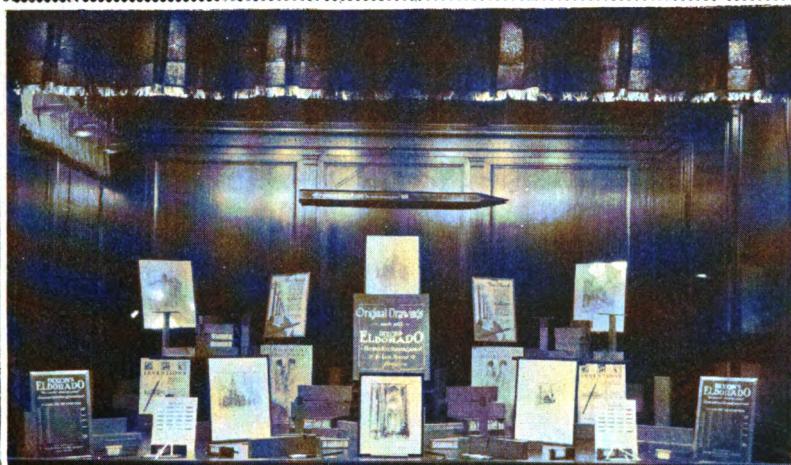
But 'ansome is as 'ansome does,
That's w'y my 'and is itchin',
To get that feller's pritty 'ead,
Beneath my arm, and pitch 'im!

SAD GIVE-AWAY.—Mrs. Hibrow—"Did the Earl you had to dinner last night bring his coronet?"

Mrs. Newrich—"I didn't even know he could play one."—*Passing Show*.

THE HARTFORD DAILY TIMES. 1

**"ELDORADO" PENCIL SKETCHES BY ARTIST HORTER
FEATURE ATTRACTIVE DISPLAY IN PLIMPTON WINDOW**



The window display at Plimpton's, 252 Pearl street, this week, which is pictured above, is featuring a number of interesting pencil sketches by Earl Horter, the artist. The main purpose of this display is to show the endless possibilities in sketching with the finely

graded Eldorado drawing pencils. These pencils are divided into seventeen distinct grades. In the "Cathedral" sketch, for instance, where only one of the seventeen grades has been used, the artist, by his fine lines and subtle shadings, has produced a startlingly realistic effect.

This display is of interest not only

to art students but to the public in general which continually uses the Eldorado pencil in its daily office routine without perhaps realizing its full possibilities in other kinds of work.

This window display was arranged

by Mr Harry Crombie whose artistic

window displays have attracted much

attention.

GERMANS GOLD

Plimpton

"You don't need to write any letter of instructions," said the Dixon Special Representative Van Dorn.

"Just send the Horter drawings and enough supplementary signs to dress one of the finest display windows you ever saw."

"Just do that, and the Plimpton organization will look after the rest of it."

Van hit the bell, all right, as you that have eyes can see from this reproduction.

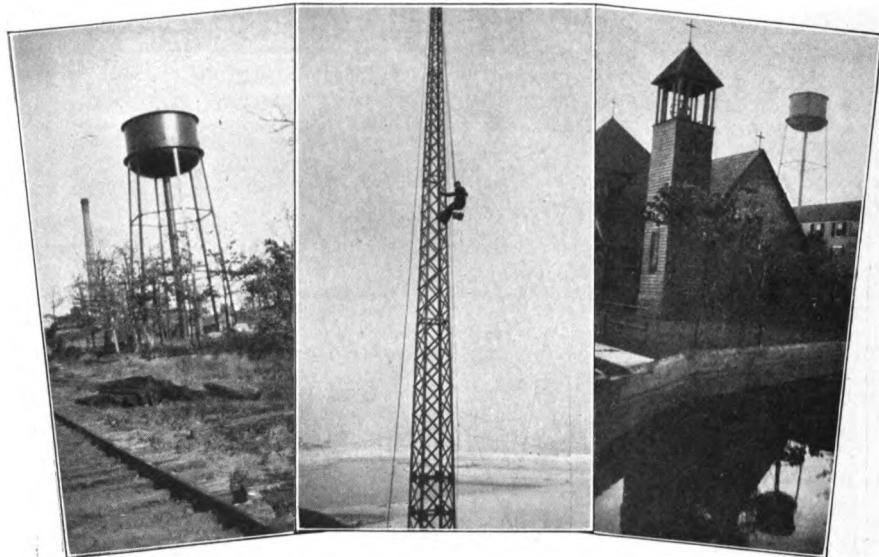
Plimpton's is to be congratulated on another mighty attractive, effective window display.

the appeal of the Atlantic Refining company to the award of the commission to Phenomenal Dupre for the

plaintiff to the effect that "all the defendant pay the plaintiff with interest."

Factors Affecting Contraction of Alloys

THE most important factors affecting the contraction of a non-ferrous alloy, on casting, include (1) chemical composition of the alloy; (2) pouring temperature; (3) cross section of the bar poured; (4) length of the bar in relation to its cross section; (5) character of the mold, and the method of molding; (6) gas occlusion, and over-heating of the melt. These factors are discussed briefly in Serial 2410, "Contraction and shrinkage of non-ferrous alloys as related to casting practice," Bureau of Mines, Washington, D. C.—*American Machinist*.



Meet Mr. Henderson

THE illustration in the center of the above group shows the wireless poles at the Sea Girt Coast Guard Station, Sea Girt, N. J. Mr. Alfred B. Henderson will be seen climbing the pole. He is not only a contracting painter of Asbury Park, N. J., but also a strong booster for Dixon's Silica-Graphite Paint.

The photo on the left shows the water tank, smokestack, bridge and other places around the plant of the Bayhead Water Company, Bayhead, N. J. The picture on the right shows a closer view of the same water tank.

All of these structures were painted during 1922 and we venture to say will not need repainting for some time to come. The happy combination of a good painter and a good paint results in a job that will stand wear for a long time.

The conditions encountered in this job will be a bit out of the ordinary for the damp, salt air of the sea shore is not the best thing in the

world for paint. We have no fear as to the result when Dixon's is used and we feel sure that Mr. Henderson appreciated these facts when he insisted that nothing but Dixon's Paint be used on the job. He knows that it will further establish his reputation as a contracting painter of the highest type.

The pigment used in Dixon's Paint, silica-graphite, is the most water-repellent pigment known. This is the reason why it is able to withstand such deteriorating agents without breaking down.

Locked in Second Gear for 450 Miles

(Continued from page 28)

protect your car from wear. It makes gears run as they should—sweetly, quietly, shifting easily and silently in summer and winter, and delivering full engine power.

Dixon's 677 is a result of scientific study of gear-box requirements by the makers of the world's finest lubricants.

Proper and Improper Methods of Applying Foundry Facings

By E. J. MALLON

(Continued from Jan.-Feb. Issue)

WHEN we consider the primary object for which facings are used and then observe how they are applied in some shops, it is not surprising that even the best facings sometimes fail to produce good castings. Ordinarily the foreman is at fault for not properly supervising the work. He gives but little attention to the manner in which facings are used, but if trouble develops he is almost certain to attribute it to "poor facing." If the trouble continues he will probably try another brand of facing in the hope of securing better results, although it is safe to say that nine times out of ten the facing has nothing to do with the trouble experienced. As stated in the previous article, it is convenient to make facings the scapegoat for all kinds of foundry failures.

Most molders are conscientious and take pride in their work, but in many cases do not understand the basic principles that govern the proper use of facings. If they did fewer castings would be lost. Possibly the following remarks will help to prevent some of the most common mistakes.

Troubles that develop from facings are usually due to

Cross-Slicking

Repeated Applications

The faults most common in molding practices, for which facings are usually blamed are

Improper Venting

Improper Gating

Wet Sand

The uncommon or rare troubles are due to

Damp or Hard Cupola Bottoms

Damp Spouts or Ladles

Poor Moulding Sands

1st—Cross-Slicking should be avoided. It is a poor habit. Any movement of the tool upon the surface of a mold tends to compress the grains of sand in the direction the tool is moving, and if after it has been slicked in one direction it is reslicked in the opposite direction, the surface will be more or less loosened, according to the amount of pressure on the tool. An examination of such a surface will disclose many minute cracks caused by the veneer of sand and facing having

raised or opened when the direction of the tool over it was reversed. Thin scabs generally appear on castings as a result of cross-slicking, irrespective of the kind of facing used.

2nd—Repeated Applications of facing to a mold, especially if rubbed in or slicked in, will tend to harden the surface and make it so dense that the escape of gas from the mold will be seriously retarded. It is probable that when the casting is machined, small holes will be discovered under the surface, due to gas having been trapped in the metal. It might be well to state, however, that not all holes can be traced to this cause. Excessive sulphur in the iron or in the fuel in a cupola sometimes causes small holes, but in that event the sulphur element can be identified by its hardening effect on the metal adjacent to the holes.

Sometimes when facings are repeatedly applied and rubbed in, the layers separate during the pouring operation and the dislodged facing will be found more or less segregated on the cope or top side of the casting. One coat of facing, properly applied, is far better than several.

In my opinion the safest place to "rub in" a facing is on the side of a mold, for the gases have more time to escape during the pouring operation; also that those parts of the mold called the "flats" should be very lightly brushed or slicked.

3rd—Improper Venting is an evil that can be easily overcome by careful supervision. It results in "blowing" and "scabbing." The facing is generally blamed for these faults although they are probably due to insufficient venting, or to not venting close enough to the surface of the mold to provide a quick exit for the gases. Special attention should be given to deep pockets or parts of a mold where gas will naturally be trapped on account of the shape of the pattern. The judicious use of the vent wire is strongly recommended.

4th—Improper Gating contributes its share of troubles, which as in the case of venting, can be prevented by the exercise of a little care and forethought. Each pattern must be studied to determine the best method of filling the mold with metal without danger of cutting or

scabbing due to the erosive action of the molten metal on the mold surface. Broadly speaking, one should avoid gating where the metal will strike a corner or sharp edge, or where a surface will be exposed for considerable time to the flow of the metal, especially on "flats." Many of our troubles occur on the "flats."

Points to be considered in gating are the amount of metal to pass over a given point, temperature of the metal, length of time to pour, and whether the section is heavy or light. By taking the proper precautions eroding can be greatly minimized. The writer remembers an incident of his apprentice days when he asked an old master-workman, "Charley, how would you gate this pump?" His reply was "with judgment and the gater." More of us should use the same method.

5th—Wet Sand is another source of trouble for which the facing is apt to be condemned. Some molders work a heap of sand too wet because damp sand packs more firmly and a mold can be finished easier than when the sand is dry. They lose sight of the fact that for best results green sand should be as dry as is practicable. Wet sand will invariably cause a casting to scab or to blow, sometimes both, due to the generation of an excessive amount of steamy gas. The castings may have to be rejected or at least will be rough or unsound.

Now come some of the uncommon causes of foundry troubles for which facings are apt to be blamed. The fact that they are rare is all the more reason that we should be on our guard against them. They are among the possible causes of trouble to look for when castings are not up to standard.

6th—Damp or hard cupola bottoms, damp spouts, ladles, runners or molds may cause the metal to boil on account of the steam generated in them trying to escape through the metal. When the metal is poured into a mold the continued bubbling causes the casting to be impregnated with small holes or the surface to be blistered by the violent action to which it is subjected by the boiling metal. Sometimes the small holes are ascribed to the presence of sulphur in the facing, for lack of a better excuse, but I have never known a single instance in which it was proved that the facing contained any sulphur.

7th—Poor Sand is responsible for some of the troubles for which facing is accused, and in this case we admit that

the evidence frequently does point to the facing. For instance, if you have been using a heap of sand for some time on fairly heavy work and have added very little new sand to build it up or strengthen it, the heap will probably become contaminated with ground bituminous coal (seacoal) to such an extent that what are known as "rat tails" will be found on most of the castings that have fairly large flat areas. The blemish is caused by the amount of excessive gas generated by the burning coal lifting or cracking the mold surface in tiny irregular seams, that sometimes form designs not unlike an old-fashioned crazy quilt. The little fins (rat tails) cause extra labor in cleaning castings. Don't blame the facing for them. Rat tails will not occur if the sand heap is livened up by the addition of new sand.

The sand may also be the chief cause of trouble if it contains too much vegetable matter, too much magnesia or lime, and more rarely, worms. Vegetable matter is detrimental in two ways—it will burn and cause little lumps over the surface of a casting, or, if the molds are not poured for a couple of days the vegetation may sprout and spoil the mold surface. Lime is undesirable in molding sand because during the preparation and pouring of molds the sand is repeatedly subject to heat and moisture. Heat burns the lime and water slakes it, causing it to expand and ruin the smooth surface of a mold. In extreme cases the effect on castings is very bad.

A good molding sand might be made up from 92 to 95% Silica and 5 to 8% alumina (clay). It should be fairly free from vegetable matter and have only slight traces of magnesia or lime, the less the better. Worms require no comment except that you watch for small round holes or tracings in the sand. After the sand is used two or three times, the worms will disappear.

In conclusion:

Don't cross-slick.

Don't use the swab too much in finishing.

Don't be afraid to use the vent wire.

Don't forget to gate properly.

Don't apply more facing than necessary.

Don't waste facing.

Don't blame the facing until you are sure it is at fault. Merely changing from one brand of facing to another will not rectify faults due to the sand or to poor molding practices.



Crouch Hardware Co.

Fort Worth, Texas

THE illustration above shows the Dixon Automobile Lubricant display in the window of the Crouch Hardware Company of Fort Worth, Texas.

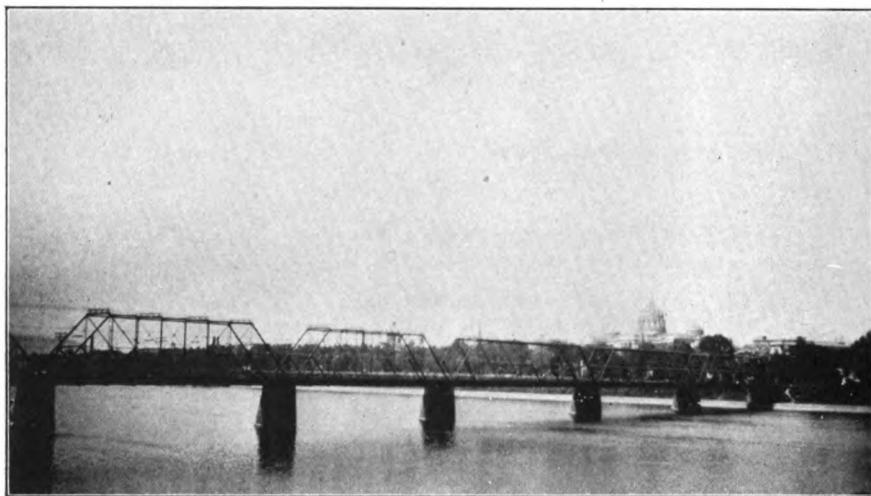
It is needless to say that the window attracted a great deal of attention and comment—and more than one person was impelled to go inside and ask about Dixon's Lubricants.

The center of attraction was the Dixon Gear Case with its revolving gears and filled with Dixon's 677. Even in the photo one can see that the lubricant adheres to the large gear and does not leave it unprotected for a minute. This is one of the important things about 677, for it does not have to be churned around and warmed up before its lubricating

qualities are available, as is the case with most lubricants.

The rest of the window consisted of cans of Cup Grease, 677 and Spring Oil together with various cards bringing out selling points of the lubricant. The racing driver photographs shown in the foreground are always a source of interest to those who stop to look in the windows. In connection with these photographs it is interesting to know that practically every American record for speed was made with the aid of Dixon's 677.

We wish to congratulate the Crouch Hardware Company upon the striking appearance of this window and trust that they will again have the opportunity of featuring Dixon Products in their windows.



A Historic Spot

IN 1776 George Washington, with 2,400 men and 18 cannons on their way to the Trenton victory, crossed the Delaware River in the dead of winter at the above point. The historic painting of this crossing has, no doubt, been seen by many in the galleries of the Metropolitan Art Museum, New York City.

The bridge, shown above, spans the Delaware at Washington Crossing and was painted with Dixon's Silica-Graphite Paint in 1908 and again in 1914, and has just recently been painted again with Dixon's Paint. This has been approximately a service of six years between paintings and many Dixon records exceed this.

The use of Dixon's Paint on this structure relieves taxpayers of the burden of frequent and expensive repaintings. Dixon's shows a remarkable record for long service, lowest cost per year of service and better protection. The few cents more per gallon when Dixon's Paint is used is

more than offset by the more months and more years of service given.

It is invincible against weather wear, expansion, brine, acids, smoke and many other deteriorating agents. It is a standard specification with experienced bridge engineers.



Baker Gun and Forging Co.

Batavia, N. Y.

January 31, 1923.

Dear Sir:—In June, 1922, we removed a three-inch boiler flue that had no shim or liner between it and the hole in the head. No great effort was required to remove it and any scale that might have been on it was scraped off by the head and the flue was found to still show the effects of a graphite coating placed on it four years before, when the boiler was re-flued.

Very truly yours,

BAKER GUN & FORGING CO.

D. W. DOMLINSON,

DWT-S.

President.

DIXON CRUCIBLES

CRUCIBLE service and economy are direct results of proper care and handling. Careful handling means longer service, more heats and lower costs.

Dixon Crucibles have built into them that quality which, if properly cared for, develops long life, economy and many heats.

They are made in all shapes and sizes, and for all purposes. For gas and oil fuel we have a special kind of crucible and it will be sent when our customers tell us that gas or oil fuel is to be used.



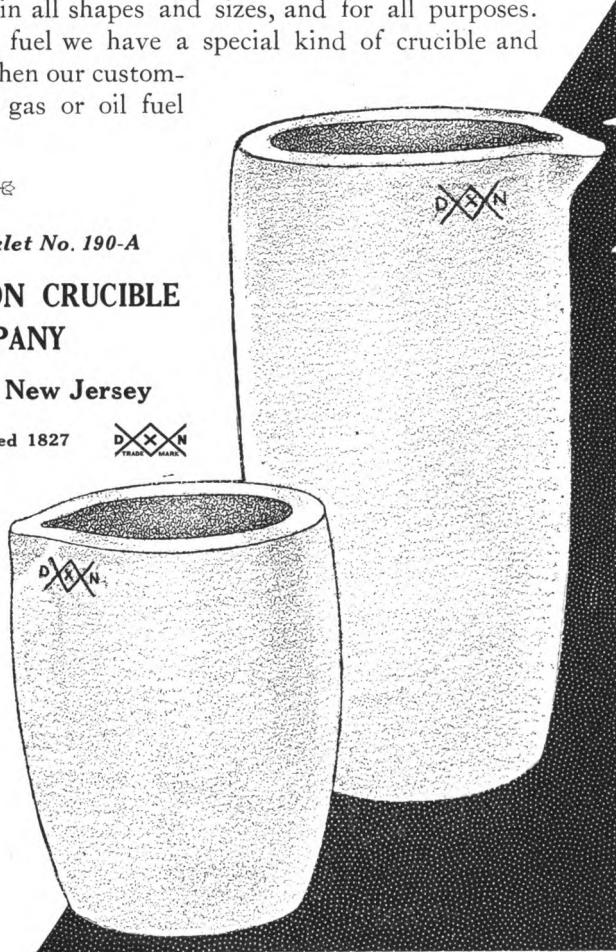
Send for Booklet No. 190-A

**JOSEPH DIXON CRUCIBLE
COMPANY**

Jersey City, New Jersey



Established 1827



HERE'S A PENCIL THAT IS
REALLY

Pleasing to the fingers!



Dixon's Ti-con-der-oga! As fine a medium-priced pencil as you have ever held in your hand. Smooth, responsive lead—and a rounded hexagon shape that is really "pleasing to the fingers." Try it *soon!* It's a real bargain in pencil satisfaction. Sold by leading stationers everywhere!

JOSEPH DIXON
CRUCIBLE COMPANY

DIXON
"TI-CON-DER-OGA"

Fort Ticonderoga, drawn by Earl Horter, after restoration drawing by Alfred C. Bossom, architect.



Graphite

VOL. XXV

MAY-JUNE, 1923

NO. 3



Bertram Grosvenor Goodhue, Architect

JOSEPH DIXON CRUCIBLE CO.

ESTABLISHED
1827

JERSEY CITY, N.J., U.S.A.

INCORPORATED
1868



*Miners, Importers and Manufacturers of
Graphite, Plumbago, Black Lead*



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Graphite

A MAGAZINE PUBLISHED BY THE
JOSEPH DIXON CRUCIBLE COMPANY
AT JERSEY CITY, N. J.
U. S. A.

Volume XXV

MAY-JUNE, 1923

Number 3

NEW NEBRASKA STATE CAPITOL

DESIGN BY BERTRAM GROSVENOR GOODHUE, ARCHITECT

"ELDORADO" PENCIL DRAWING BY EARL HORTER

YOU CAN SEE
HOW BOLDLY
IT WILL STAND:
HOW VERY NOBLY
ON THAT WIDE,
RICH LAND:
HOW TRULY,
HOW GRANDLY,
IT IS PLANNED! . . .
IT WILL SHINE
A GLOWING PILLAR
WITH DOME OF
GOLD.

TO WARM THEIR
HEARTS
WHO LIFT UP EYES
ITS GLORY TO
BEHOLD . . .
WE HEAR A CLEAR
VOICE SPEAKING
FROM DEAD
DISTANT DAYS:
'TIS THE VOICE OF
NEBRASKA
AS OF OLD! . . .

Short Sermons for Salesmen:
Confidence in Selling

TO gain the complete trust of the buyer, the salesman must have confidence that his product is trustworthy; must have confidence that his dealer can sell it and transmit this confidence to the dealer. He must have confidence that his product is serviceable, useful and desirable to the ultimate user.

This is also called "vision," seeing ahead the way over obstacles that appear unsurmountable to those without confidence, without this vision.

To get a good view across country, you must have elevation; in business and in selling, you must have elevation. When you show your prospect the things ahead, you bring him up to your elevation.

The salesman must first sell *to* himself. He wastes his own time, and the time of others, when he goes out and offers an article with which he is unfamiliar, whose utility he is unconvinced of. Trying to sell thus unprepared is drudgery, and unprepared so-called salesmen become a nuisance to the buying public.

The real salesman makes a complete study of his product. He compares it at every opportunity with competing articles of similar nature. He *studies* all competing products, but *says* little or nothing about them. If he has an entirely new device or invention, he tests it for every imaginable purpose for which it might be applied and becomes familiar with its workings. Knowing the possibilities and the limitations of his product, the salesman has confidence in it and can convey this confidence to others. Knowing its limitations and being careful not to recommend the product beyond its effective range of use-

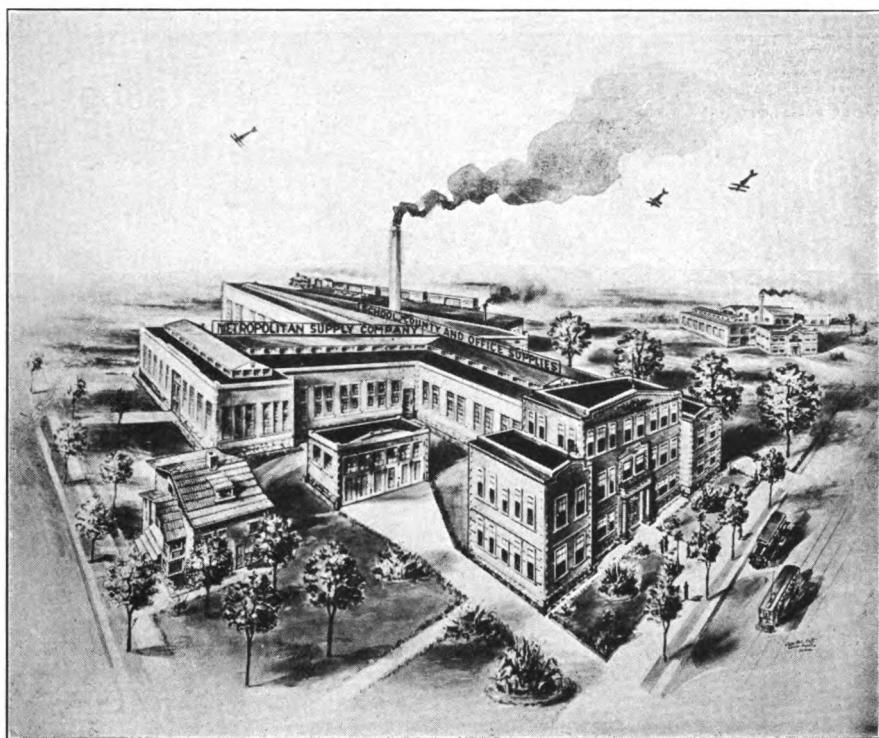
fulness, he reassures the buyer as to his integrity and his conscientiousness, which increases the buyer's confidence in his actual recommendations.

Few are the buyers who are not offered many ways of spending every dollar they have to spend. They are compelled to assume a defensive attitude against many persuasive salesmen. This defense often becomes a habit, and many things are said lightly by buyers to disparage products offered by salesmen, and many exaggerated things said in defense of the product in use which the salesman is trying to displace. When the salesman weakens in the face of this conversation, it is a sign of lack of confidence in his product, which the buyer is quick to recognize, so this lack of confidence confirms the buyer in his earlier choice. The buyer's defense is natural and to be looked for.

It is, in a way, a sort of loyalty in him to his own judgment. You may have a car that does not work well, that causes considerable expense all the time for repairs. You were proud of this car when you got it. It then embodied your best judgment within your means. You may learn later that your judgment was poor, and the car is a "mess of junk"—but you do not like to have anyone else tell you so. You may want a new and a better one with the greatest intensity of desire, yet if anyone tells you the blunt truth about the old one, you will come out grandly in its defense! A case where your loyalty transcends your sincerity.

A salesman, secure with confidence in his product and in himself, can pass off these loyal protestations

(Continued on page 58)



New Plant of the Metropolitan Supply Co., at Cedar Rapids, Iowa

OUR good friends and customers, the Metropolitan Supply Company, as our representative, Mr. O. C. Steele, writes us, are now well established in their new home in Cedar Rapids, Iowa, to which they moved their stock and organization some time ago. This plant was built and designed for them: a complete School Supply headquarters on a large scale.

What the new home means in capacity, equipment, facilities, and location, is set forth in the attractive folder this concern has issued from which we quote, as follows:

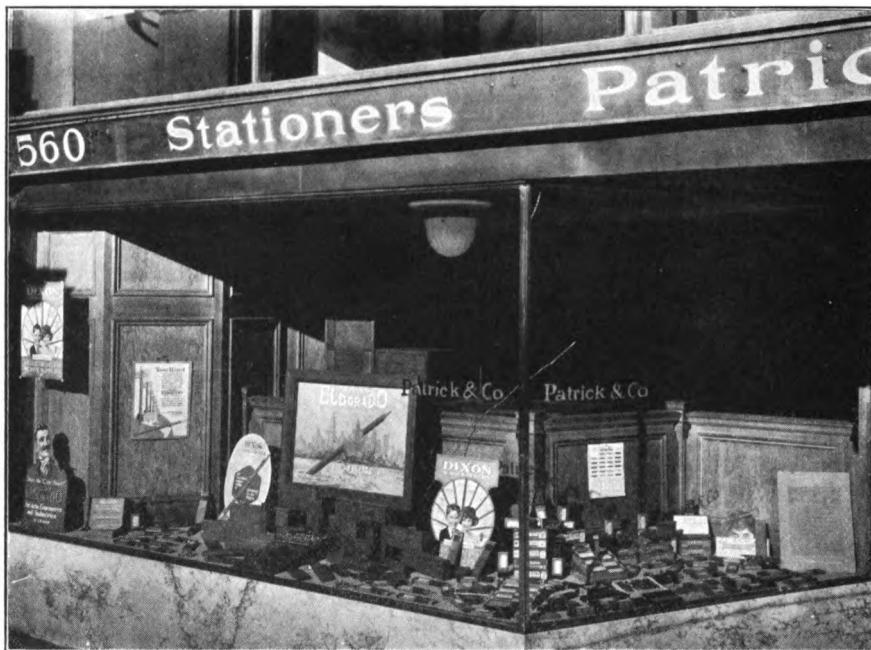
Capacity—The New Metropolitan building has a capacity of 47,420

square feet floor space which makes possible the greatest efficiency and service.

Equipment—New equipment has been installed which affords the largest range of possibilities in production of school items.

Facilities—The new plant location makes it possible for you to receive the advantages of Cedar Rapids' network of railways. Not an hour in the day but that we can start goods your way. Our mammoth warerooms filled with needs for the schools—Cedar Rapids freight rates.

Exhibit Hall—An exhibit hall has



been provided in the new quarters in which we will display all the latest and best types of School Furniture, Equipment and Supplies. We invite you to come to Cedar Rapids and look over this up-to-date exhibit.

A praiseworthy feature of this new plant is the recreation and lunch room, so equipped that the employees may each day enjoy a happy, healthy lunch-hour.

The Metropolitan Supply Company say the investment in their new home is an evidence of faith in the educational development of the Schools of America, and we agree with them that it is, and we predict it is a faith that will be fully justified by the event itself.

Patrick & Co. San Francisco, Cal.

THERE'S a clever mingling of boxes and signs in this display. We're especially glad to see the Dixon School Post fastened to the front window.

We've been told so often that "Stationers won't use your posters on their windows."

We say it depends on the poster! For a poster can be a work of art, reflecting credit on any display, no matter how beautiful in itself, in any window however expensively and handsomely fitted, on whatever street, avenue, boulevard, or resort of fashion or wealth.

So thanks to you, Mr. Window Dresser, for an object lesson on the use of fine posters.

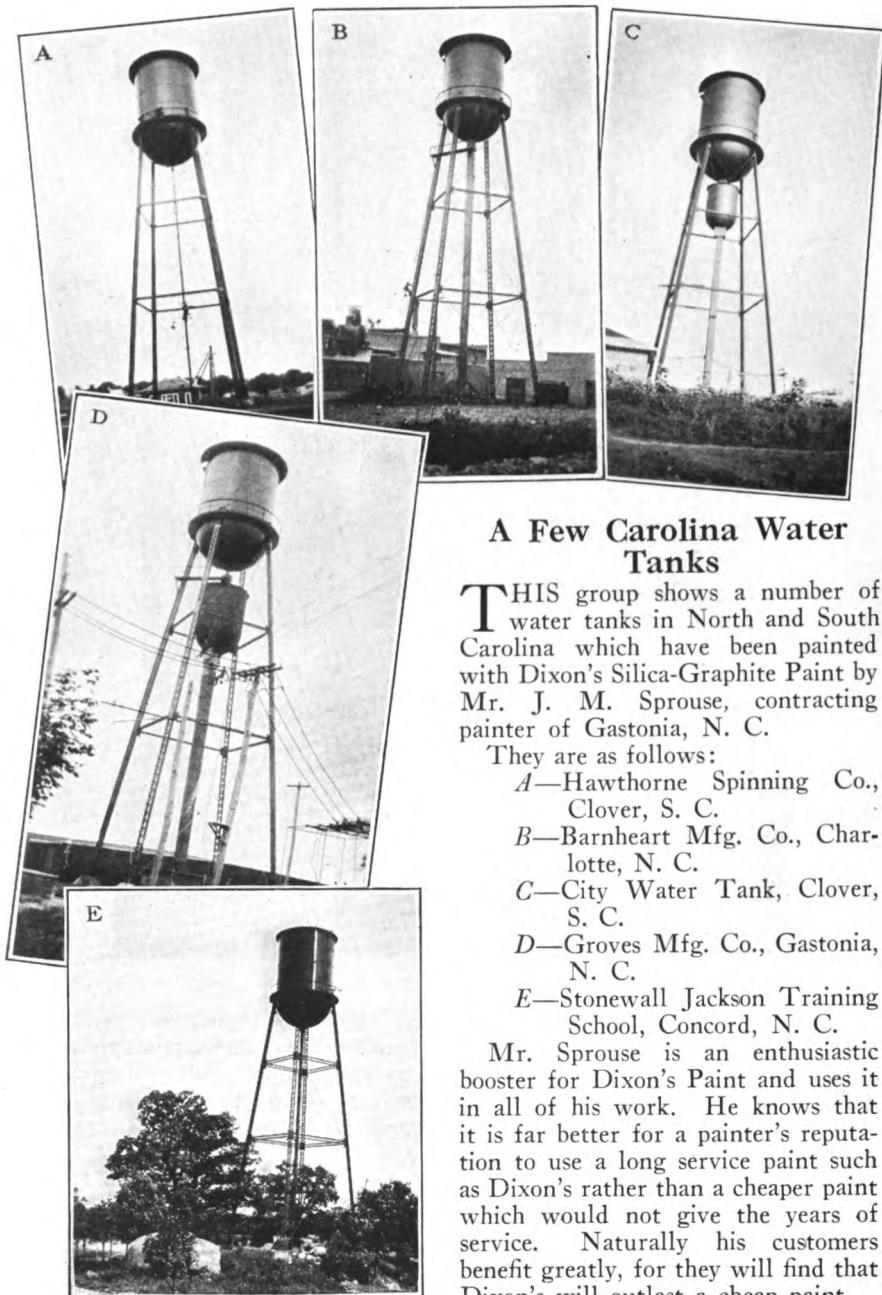


A *Treasure Chest of Color*

Dixon's "Best" Colored Pencil Set No. 110. 24 colors. Considered by many artists to be the best colored pencils made. Smooth—true to grade—responsive. Will stand unusual pressure. The colors will excite your admiration.

JOSEPH DIXON CRUCIBLE COMPANY
Pencil Dept., 190-J Jersey City, N. J.

Sample Offer We shall be glad to send you full length free samples of Dixon's "Best" COLORED PENCILS. In writing please state the two or three colors you prefer.



A Few Carolina Water Tanks

THIS group shows a number of water tanks in North and South Carolina which have been painted with Dixon's Silica-Graphite Paint by Mr. J. M. Sprouse, contracting painter of Gastonia, N. C.

They are as follows:

A—Hawthorne Spinning Co.,
Clover, S. C.

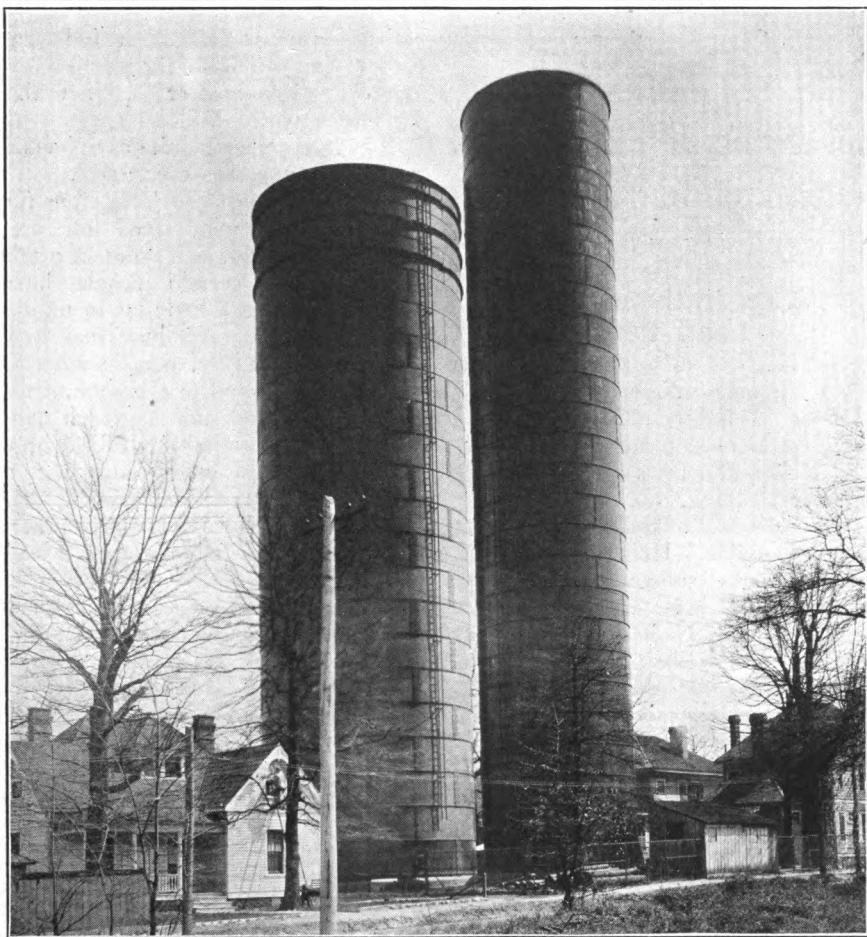
B—Barnheart Mfg. Co., Charlotte, N. C.

C—City Water Tank, Clover, S. C.

D—Groves Mfg. Co., Gastonia, N. C.

E—Stonewall Jackson Training School, Concord, N. C.

Mr. Sprouse is an enthusiastic booster for Dixon's Paint and uses it in all of his work. He knows that it is far better for a painter's reputation to use a long service paint such as Dixon's rather than a cheaper paint which would not give the years of service. Naturally his customers benefit greatly, for they will find that Dixon's will outlast a cheap paint.



Standpipes, Greenville City Water Works

THE two standpipes in the above illustration are owned by the Greenville City Works of Greenville, S. C. The larger one measures 40 ft. by 130 ft., and was built in 1922 and painted in September of the same year with Dixon's Silica-Graphite Paint.

The smaller one measures 25 ft. by 130 ft., and has been in use for about twenty years. It was painted the first of this year with Dixon's Silica-Graphite Paint.

Many other water companies use Dixon's Paint for the protection of their standpipes and strongly recommend it as perfect for this service.

Used on the interior of tanks Dixon's Paint does not taint or dis-color the water.

The ingredients, silica and flake graphite, cling tenaciously and resist dampness as well as other rust-producing agents. The vehicle is pure boiled linseed oil.

Graphite

PUBLISHED BI-MONTHLY BY THE
JOSEPH DIXON CRUCIBLE CO.

AT JERSEY CITY, NEW JERSEY, U. S. A.

*In the interests of Dixon's Graphite Pro-
ductions, including Crucibles, Lubricants,
Pencils, Paints, etc. Sent free upon request.*

Vol. XXV MAY-JUNE, 1923 No. 3

The Indispensable Lead Pencil

WHEN does a thing or person become indispensable?

Food is indispensable; and so is clothing in most parts of the world; and civilization rates as indispensable a decent lodging.

In our world of today rapid transit is indispensable. Hence, automobiles, motor trucks, subways, ocean greyhounds, and last, and fastest, the aeroplane: surely here is a case of where "the last shall be first." This last reflection, of course, is expressed in the shape of a pun, but is none the less true for all that.

But how is the lead pencil indispensable? You are to answer that question by asking another one. What would you put in its place; how could you do without it?

Its growth has synchronized the growth of the comforts and conveniences of modern civilization.

Do you know anything which you use in your business life more than a lead pencil? You could ask this same question of a boy or girl starting to school and you could continue to ask it at any time during his or her period of activity in this world of ours.

When you cease to have use for a lead pencil, the world probably has ceased to have use for you—or you have ceased to have use for the world.

Some forces are all-pervasive: sun-

light, for example. Is it indispensable? Can you figure the world without it? The answer is, "not this kind of a world."

The lead pencil is quite as universal a thing as man has ever made.

Certain people who have time for contemplation, who stand off and look at the world, as it were, at arm's length: these certain people have spent themselves a little bit in telling their fellow creatures how they look up to the little lead pencil: what it means to them and to everyone of us.

Recently much ink has been consumed in the public press to tell how modern men of importance use a lead pencil in their daily work. So it would seem that the bigger you are, the more use you will have for a lead pencil.

And the more use you have for a lead pencil, the better it ought to be.

Confidence in Selling

(Continued from page 52)

for what they are worth, and in his turn may, with his confidence and enthusiasm, present his product as worthy of future loyalty and greater loyalty which shall overcome the less. Lack of confidence in the come-back to the usual buyer's defense is bound to be disappointing to the buyer. It leaves him somewhat hopeless as to his prospect of getting a good article from this salesman and there is no action. When the buyer sees that in spite of his protestations and general cloud of defense, the salesman maintains his steady confidence in his product and its fitness, then the buyer sees the possibility that his hope of getting a better product may be realized here and now—then there is action. So it is that the confident salesman gets the orders. His work is not drudgery and the day seems too short.

DIXON'S 677

A Transmission and Rear Axle Lubricant of Dixon quality, that will function long after ordinary lubricants would have failed.

Not only does it last long, but it *lubricates* to the end.

Its superiority over other lubricants is quickly evident to those who use it. They appreciate its economy and the rare type of service it renders.

TRY IT AND BE CONVINCED

JOSEPH DIXON CRUCIBLE CO.

Jersey City, N. J.



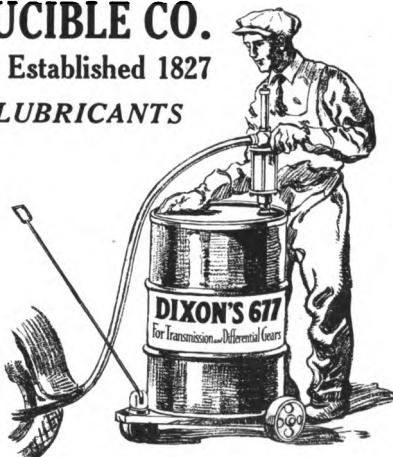
Established 1827

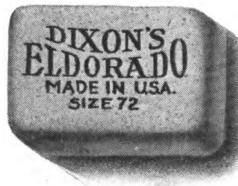
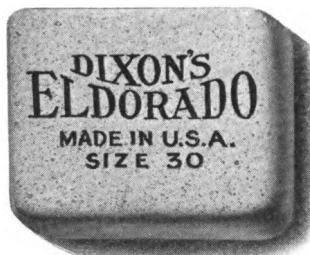
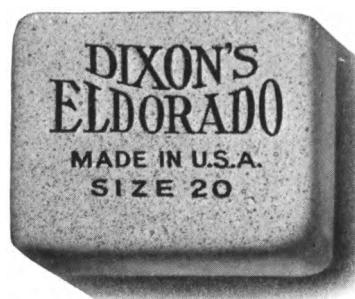
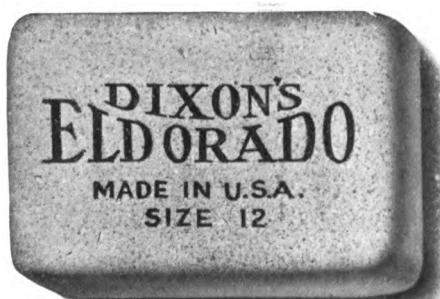
MAKERS OF QUALITY LUBRICANTS

*For Spur and Bevel Gears
Use Dixon's Gear Lubricant
No. 677*

*For Worm Drives Use Dixon's
Gear Oil No. 675*

*For Universal Joints Use
Dixon's Grease No. 672*



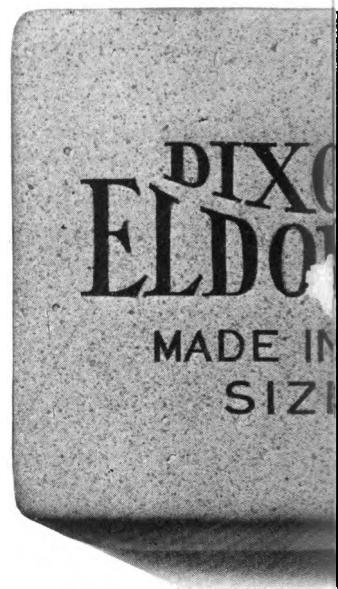
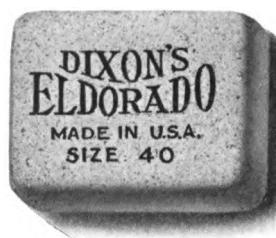


DIX
ELDO
ERA

A SPECIAL NEW ERASER P

IN ALL SIZES: 4, 8, 12, 16,

ILLUSTRATIONS SH



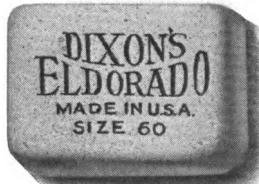
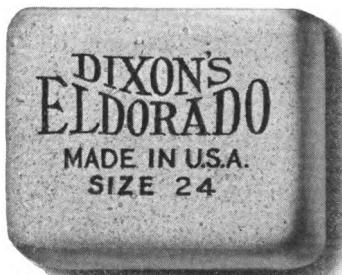
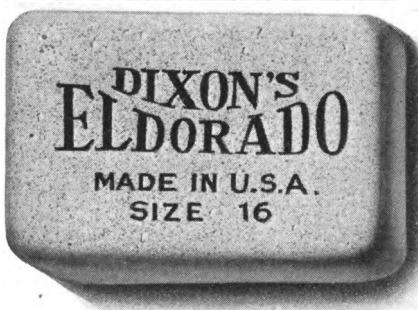
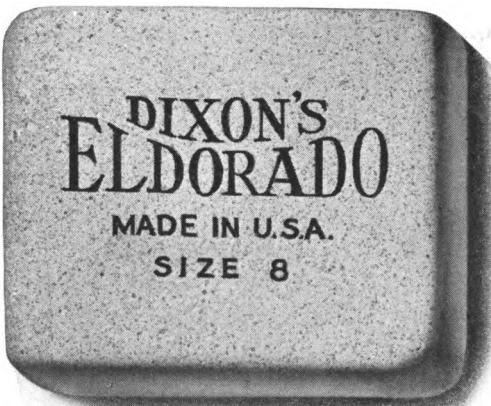
Made in U. S. A. by JOSEPH DIXON C

DIXON'S ELDORADO ERS

ARTISTS AND DRAFTSMEN

4, 30, 40, 48, 60, 72 and 80

ASERS FULL SIZE



BLE COMPANY, Jersey City, New Jersey



"Eldorado" Window Display

O. B. Stanton & Wilson, Toronto, Canada

FROM the land of the Maple Leaf comes this letter, signed by R. M. Barbour, Manager, Sales Promotion Service, A. R. MacDougall & Co., The Dixon Pencil Agents for Canada.

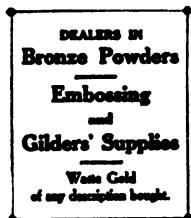
The firm of O. B. Stanton & Wilson, Limited, Commercial Stationers, located at 54 Yonge Street, is perhaps one of the oldest stationery firms in Toronto. Originally established under a different name by O. B. Stanton, original founder and present head of the organization, it has been located for the last twelve years in one of the best down-town commercial sections of the city.

Originally at 39 Scott Street, the firm later moved its premises to 45

Yonge Street, just a few stores below its present location. At present it has one of the most favorable locations in the city, being within half a block of all the larger financial and commercial buildings. Being on Yonge Street, the number of the business men that pass this store daily gives this firm a splendid opportunity of making good use of their window.

O. B. Stanton & Wilson invariably have a window which will attract the passerby, and as a general rule feature novelties in the commercial stationery line, articles which will catch the eye through their novelty and bring the passerby into the store to inquire about the new items which are so in-

(Continued on page 64)



NEW YORK OFFICE
 30 MARCY AVENUE
 BROOKLYN, N. Y.

ESTABLISHED 1861

CABLE ADDRESS: BLOKSUAR

INCORPORATED 1915

F. W. Rauskob Co.

Manufacturers of.

*Gold, Silver, Aluminum and Composition Leaf. **

TELEPHONE MYSTIC 2700

16 Franklin Street

Medford 55, Mass.,

April 9, 1923

Joseph Dixon Crucible Co.,
 Jersey City, N.J.

Gentlemen:-

We wish to inform you that we have carefully tried out the shipment of crucibles recently received, and find them very satisfactory, and far better than any we have so far used.

Our smelter finds them even better than the Hession Pots which we used to get before the war.

We hope you will succeed in introducing them to other gold leaf manufacturers, and will gladly recommend them for you.

Enclosed please find an order which we wish you would forward as soon as possible as we are rather low on these sizes.

Yours very truly,

F. W. RAUSKOB COMPANY

Fred. W. Young.
 Treasurer

PHY/AR

Guide Post

IF you are a poor mortal who makes mistakes, or one who changes his mind: a word with you. And a word with you if you are an artist or draftsman: and right along you must go over your drawing and clean it—no corrections, no changes: but the surface of the paper must be cleaned, leaving the lines intact.

Or if you are in a business such as the making of corsets; and the fine white fabrics and trimmings, being a little soiled, call for a gentle, effective cleaning,—a word with you.

Again, if you handle such a commodity as leather, and you wish to take out crayon marks on it,—a word with you.

With all such good people, a word: or maybe two or three words:

That Dixon's "Eldorado" Eraser—just arrived—is the tool for such jobs.

See the center spread for the sizes in which it is made.

You ought to try it very soon.

Your Stationer has it, or will get it for you.

Loaf and grow fat—headed.

They ask for CONFIDENCE: but my ears report to my brain an alarming stress on the first syllable.

What is unkindler than a sharp tongue?

"Eldorado" Window Display

(Continued from page 62)

geniously selected for their window display.

Occasionally, however, O. B. Stanton & Wilson dress a window with one of their staple lines and one of the most interesting shown recently, was this complete window on Dixon Eldorado and other Dixon merchandise.

From the photograph above, readers of GRAPHITE will see that this firm made a very attractive display with the window material provided for Eldorado dealers. This window remained in for two weeks and attracted considerable attention. One feature, the posting of reproductions of Earl Horter drawings done with the Dixon Eldorado, drew considerable attention, and it was interesting to note that they had many inquiries for these drawings and many more regarding the pencil that had been used in this splendid work.

O. B. Stanton & Wilson display an 1182 case at all times on one of their foremost showcases, and this firm has learned that Eldorado well displayed, is easily sold.

Mr. O. B. Stanton, the head of the firm, is a firm believer in the quality of Eldorado, and is loud in the praises of his business dealings with the Dixon Company.

Mere politeness is not good-nature.

The parrot took music lessons, and wondered why the untutored lark out-sang him.

Rather rob the cradle than the grave.

In Spring, a young man's fancy lightly turns to thoughts of—loaf.



An 18,650 Lb. Casting

THE photograph above shows a 72x42x42x42 flanged double Y branch casting made at the Radford Works of the Lynchburg Foundry Company.

This double Y casting weighs 18,650 pounds and was cast with the aid of Dixon's Graphite Facing No. 6726. This same facing is also used at the Lynchburg plant of this Company.

Dixon's Graphite Facings slick well, cover well, and will not wash ahead of the metal. They form an effective separation between the

molten metal and sand. Castings lift out in a condition that saves a lot of expensive cleaning.

Dixon's Facings are made from the highest grade plumbago, and their remarkable uniformity in quality and results is obtained through constant laboratory supervision.

We have convinced many foundrymen that high grade facings are really cheaper than the grades that cost less to buy—and now we would want to convince you. Let us send a sample of Dixon's Graphite Facings that is adapted to your work.



SEVEN years ago, the Eldorado pencil was new—untried save in the laboratory of its maker. Today it is used in more engineering offices and in more drafting rooms than any other pencil. There could be no better proof that it is, indeed, “the master drawing pencil.”

SAMPLE OFFER

Write for full-length free samples of “The master drawing pencil” and of Dixon’s “BEST” Colored Pencils. In their field, the “BEST” Colored Pencils hold the same position of supremacy as Dixon’s Eldorado.

**DIXON'S
ELDORADO**
“the master drawing pencil”

JOSEPH DIXON CRUCIBLE COMPANY, Pencil Dept., 190-J, Jersey City, N. J.

Canadian Distributors: A. R. MacDougall & Co., Ltd., Toronto

The Difference Between Ferrous and Non-Ferrous Metals and the Care of Crucibles in Brass Foundry Practice

WE are indebted to Mr. C. F. Hopkins, Works Manager of The Ajax Metal Company, Philadelphia, for his kind permission to publish his address at the Summer meeting of The Philadelphia Foundrymen's Association.

Mr. Hopkins spoke as follows:

It is characteristic of Iron Founders to speak of their product in terms of Tons, while the Brass Founders always speak in Pounds.

These terms indicate very clearly the difference in the amounts produced by these two branches of the casting industry.

I have been unable to obtain any figures on actual pounds produced in the United States by either line, but according to the Geological Survey, the annual output of Pig Iron for foundry use is about 5,000,000 Gross Tons, or 11,000,000,000 pounds, while the quantities of Copper, Lead, Tin and Zinc used by Brass Foundries is approximately 110,000,000 pounds, or a ratio of 100 to 1.

The number of Foundries engaged in each line is significant.

Penton's Foundry List shows that there are in the state of Pennsylvania

610 Cast Iron Foundries and
360 Brass Foundries.

According to these figures, the average production per Iron Foundry is one Net Ton of Castings for each Twelve Pounds per Brass Foundry.

A further analysis of Penton's List shows that

392 Gray Iron Foundries do not make Brass Castings,

142 Brass Foundries do not make Iron Castings, and that

218 Foundries make both Iron and Brass Castings.

The great number of brass foundries, in proportion to their output, places them under a heavy handicap when attempting to operate in an efficient manner, as in many cases they have too small a tonnage to permit the establishment of up-to-date buildings and equipment, with the properly trained direction for obtaining the best results.

Then, too, there are few organizations

devoted to the subject of Non-ferrous Alloys while the entire country is well covered by clubs, associations and societies for dealing with the problems of the Gray Iron Foundries.

The differing characteristics of Cast Iron and Brass account for the much greater use of Iron.

PLATE NO. 1
COMPARATIVE DATA ON IRON AND BRASS

	HEATING POINT IN °F.	SPECIFIC HEAT OF WATER IN BTU. LBS.	WEIGHT OF TONNE IN LBS.	COMPRESSION TEST IN LBS. PER SQ. IN.	TENSILE TEST IN LBS. PER SQ. IN.	ELASTICITY TEST IN LBS. PER SQ. IN.	DUCTILITY TEST IN PER CENT.	PRICE PER LB. IN U.S.	PRICE PER LB. IN U.K.
IRON	1000	1.095	40	337	8000	13000	100	1.44	1.44
IRON CUP. 70. PB. 25. ZN. 2	1000	1.095	39	337	11800	18000	100	1.44	1.44
RED BRASS					21000	24000	16000	16.00	16.00
CUP. 85. PB. 10. ZN. 2	1080	0.940			18000	22000	18000	20.00	20.00
PLASTIC BRONZE	1000	0.775			14000	18000	14000	12.00	12.00
CUP. 70. PB. 25. ZN. 2	1000	0.775			21000	24000	18000	18.00	18.00
PHOSPHOR BRONZE	1100	0.645			21000	18000	14000	18.00	18.00
CUP. 70. PB. 10. ZN. 10. Pt. 2	1100	0.645			21000	18000	14000	18.00	18.00
YELLOW BRASS					23000	26000	21000	23.00	23.00
CUP. 85. ZN. 2	1045	0.945			18000	22000	18000	16.00	16.00
MANGANESE BRONZE	1000	0.915			18000	22000	18000	16.00	16.00
GOVERNMENT BRONZE					21000	24000	18000	20.00	20.00
CUP. 85. BH. 10. ZN. 2	1015				21000	24000	18000	21.00	21.00
COPPER	1020	0.925	17	337					
LEAD	657	0.814	16	337					
tin	657	0.814	16	337					
ZINC	734	0.924	16	337					

On Plate "1" I have attempted to present figures in table form which will enable you to visualize these differences at a glance.

While I do not claim that these figures are correct to the Nth degree, they are those given by the American Society for Testing Materials, Moldenke, Payne, Clamer, Kent, Law, Vickers and others, and are sufficiently accurate for the purpose.

The prices are those supplied by the American Metal Market of April 5th, for New York Quotations.

In the matter of prices, Pig Iron can be purchased at from 1.44 to 1.58c per pound, while the cost per pound of the virgin metals entering into Non-ferrous castings run from 14.26c for yellow brass to 20.27c for gun metal.

On price alone, Non-ferrous castings would never be used.

The properties of Cast Iron which make it the metal par excellence for many purposes are its High Compressive Strength, Rigidity and the facility with which it can be cast and machined.

In these properties it far exceeds the Brass and Bronze mixtures.

Cast Iron often fails to meet demands because of its low Tensile Strength, Brittleness, Rapidity of Corrosion and Poor Anti-frictional qualities. In such cases, one or another of the Non-ferrous alloys are selected, depending upon the particular quality desired.

A fundamental difference between the virgin metals used in Iron and Brass Foundries is that, whereas Pig Iron is delivered to the Foundry practically ready for use, those metals which go to make Non-ferrous alloys are delivered separately and must be combined in the right proportions and by the correct methods, to meet the various requirements.

Pig Iron is a combination of two metals, Iron and Manganese, with four Metalloids, Silicon, Sulphur, Phosphorus and Carbon.

The Iron content is usually between 92 and 95 per cent., the balance being made up of the other elements in varying percentages, depending upon the quality of the Ore and the Smelter practice used in producing the finished product.

The Iron, Silicon, Phosphorus, Manganese and Carbon are the desirable elements entering into Pig Iron while the Sulphur, except in special cases, is detrimental and is a content only because it is not commercially possible to produce the Pig Iron without it.

I am informed that most of the Pig Iron used in Philadelphia and vicinity, comes from either Buffalo, Eastern Pennsylvania or Virginia and that the three grades commercially known as No. 2, No. 2X and No. 1X, are sufficiently diversified in their contents to enable any foundryman to combine them in such proportions as to produce any desired quality of castings.

With a large majority of the Iron Foundries I am advised that the number of distinctive mixtures produced in any one foundry are very few, unless a number of cupolas are a part of the equipment.

In the Non-ferrous Foundry, copper is the predominating element but to give the desired properties to the castings, Lead, Tin and Zinc are usually added in varying proportions, while in many cases small quantities of Iron, Nickel, Manganese, Aluminum and Phosphorus are introduced to develop peculiarities which are essential for certain purposes.

The number of distinctive mixtures employed in the production of Non-ferrous castings is legion.

The American Society for Testing Materials has attempted to formulate a logical and scientific classification of these alloys. Dr. Campbell of Columbia, says that the subject is one of some difficulty and presents a list of well known mixtures to substantiate his statement. This list contains 799 formulae for the production of copper base castings in Brass Foundries. These formulae are divided as follows:

275 Brass, i. e., Copper with Zinc as the principal alloying metal.

260 Bronze, i.e., Copper with Tin as the principal alloying metal.

165 Nickel Silver, i.e., Copper with Nickel as the principal alloying metal.

49 Aluminum Bronze, i.e., Copper with Aluminum as the principal alloying metal.

50 Manganese Bronze, i.e., Copper with Manganese or Manganese and Zinc as the principal alloying metals.

It is not my desire to add to the Doctor's difficulties, but in checking up the list I noticed that several formulae were omitted from which The Ajax Metal Co. makes millions of pounds annually.

The Society has presented several tentative specifications with the object of reducing the number of formulae and establishing standard mixtures for specified purposes. These specifications are being gradually accepted.

Were it possible to make castings entirely of virgin metals, the matter would be comparatively simple, but the situation is complicated by the necessity of using scrap, of which there are two general classes, viz:

Domestic and Foreign

Domestic Scrap is produced in every foundry in the form of "gates," "defectives," and "spillings." In both Iron and Brass Foundries the gates and defectives are easily rerun because their contents are known, and it is only a matter of keeping the various formulae separate.

With "the Spillings," I understand that in the Iron Foundry they are collected, the Iron is removed from foreign matter by means of magnetic separation and the recovery charged at the end of each heat. In the Brass Foundry the situation is quite different, because of the number of mixtures run and the fact that "the Spillings" are non-magnetic.

Foreign Scrap i. e., that which is obtained from outside sources, requires judgment in its use.

Foreign Cast Iron Scrap is in a general way, graded by the dealers. The Foundryman may further determine its contents by the shape it is in, or by examining the fractures of samples representative of any lot.

Foreign Scrap used in a Brass Foundry is more difficult to handle, as it may contain one or a dozen of the 799 mixtures to which reference has been made.

It is the Nemesis of the Brass Founder, because the elements it often contains will produce bad castings and yet the majority of Foundries do not possess the means for determining which lot of scrap is best suited for any particular purpose. For this reason many Brass Founders have abandoned the use of Foreign Scrap, preferring to buy it in ingot form from refiners who are able to state its contents.

The American Foundrymen's Association has adopted specifications for Foreign Scrap, but I am unable to state how the plan is working out.

The National Association of Waste Material Dealers has also done similar work for both Cast Iron and Non-ferrous Scrap, with the object of standardizing the different grades. These specifications, while answering the purpose of general guides, are not sufficiently determinate to enable the Brass Founder to use them as a basis for making mixtures, except on the broadest lines.

In the Iron Foundry then, we have Pig Iron, Domestic Scrap and Foreign Scrap from which to select the metals for a charge. In any case all the elements are combined and it is only necessary to select the right proportions of each kind of stock to produce the desired quality of castings.

In the Brass Foundry where the mixtures may contain anywhere from 60 to 95 per cent. of Copper, the principal metals used are Copper, Lead, Tin and Zinc, with small percentages of Iron, Nickel, Manganese, Aluminum, Phosphorus, Phosphor Tin or Phosphor Copper and varying quantities of Domestic Scrap and Foreign Scrap. From these the selections are made according to the quality needed and unless great care is exercised in their selection the results are not always satisfactory.

The temperatures required to melt Cast Iron vary with the grade and run from 1900° F to 2200° F, while the casting temperature is given at from 2600° F to 2900° F.

These temperatures are readily obtainable with the cupola, which type of furnace is used almost universally in Iron Foundries. Changes occur during the melting, but I understand that with proper care, they can be controlled within very close limits. With wrong cupola practice the Iron may be oxidized while melting, but after tapping the amount of oxide formed is negligible.

The melting points of the elements entering into Non-ferrous alloys have a wide range, Phosphorus melting at 111° F, Nickel being at the other end of the scale with 2650° F. Most of the elements oxidize rapidly while melting and continue to do so while pouring.

There is no one furnace in general use for melting Non-ferrous alloys.

Up to about thirty years ago the melting was done in the pit furnace, in which crucibles contained the metal and coke or coal supplied the heat, though there were a few reverberatory furnaces used when large castings were to be made. Later oil and gas to some extent, took the place of coke and coal as fuel.

Open flame furnaces, in which the metal is charged into a melting chamber and an oil or gas flame is directed toward it are quite common.

Because of the strong tendency of Non-ferrous Metals to oxidize and to pick up sulphur from the fuels used, many attempts have been made to use electric current for heating purposes.

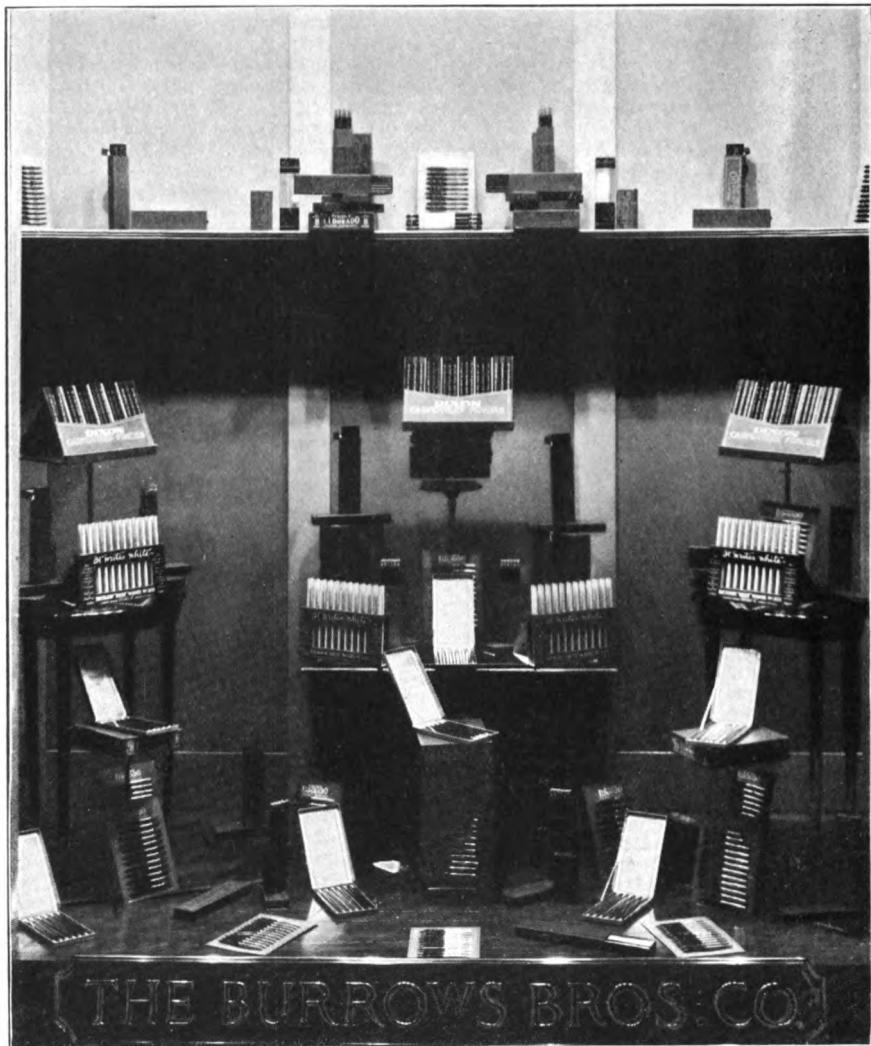
Dr. Gillett of the Bureau of Mines has written two bulletins on Brass Furnaces—the first containing 300 pages, treats of crucible and open flame types, while the second containing 334 pages, describes eighty different electric furnaces which have been used, tried, or suggested for melting non-ferrous alloys.

Attempts have been made to determine what percentage of each kind of furnace is used for the production of Non-ferrous castings, but with negative results.

One crucible maker states that his business has fallen off, though he has not classified this decrease as between rolling mills and foundries.

A second maker informs me that he is working to capacity and is behind on his orders, while a third has doubled his capacity in the past two years and expects to make further increases during 1923.

(To be continued)



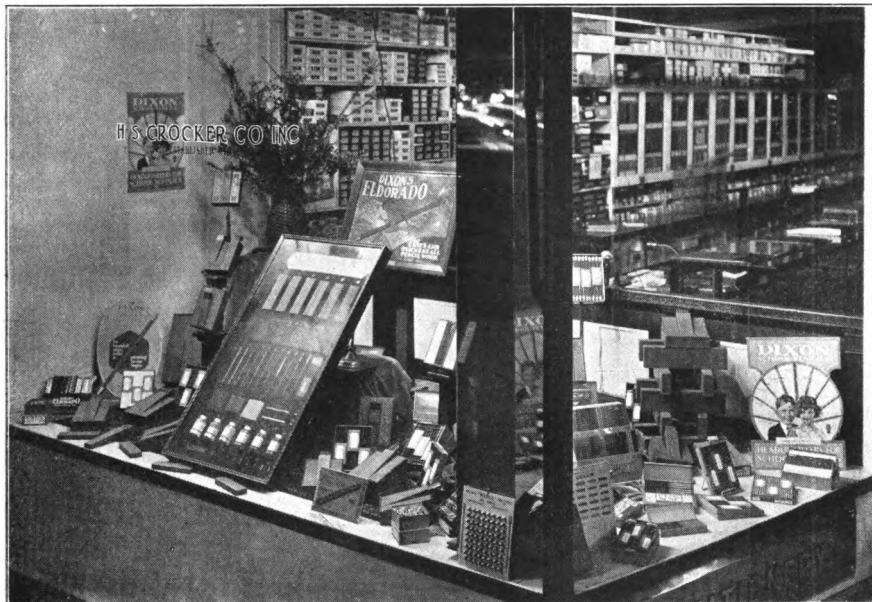
A Superb Window Display

Burrows Brothers, Cleveland, Ohio

A FRIENDLY and observant customer wrote us this way: "I have just returned from lunch. On my way I was 'stopped in my tracks,' as it were, at the sight of a superb display in one of the Burrows Brothers' window. You certainly

ought to be proud of this display." So we wrote our Representative, C. A. Orth, to get us a photo of that window, which he did, doing things being a sort of specialty of his, and here you have it.

It shows the sort of display that



makes you respect the owner of it, and whoever made it, and you want to buy for yourself what it contains.

If you are a stationer who is reading these words; or a window dresser in a stationery store; if you are interested in packages and labels, please take a good long look at this picture. Note how strong and bold the packages stand out; and there isn't a sign in the window, is there? The Dixon Pencil packages are so designed that you can quickly and effectively dress a window with them alone.

◆ Wishes

*A little new, a little old,
A little shy, a little bold,
A little warm, a little cold.*



“Copy-Cat!”

*I never heard a “tuneful lark,”
But if I ever hear one,
I rise to venture to remark,
It’s sure to be a dear one.*

A Fine Window-Display of Dixon Pencils

H. S. Crocker Company, San Francisco

A WINDOW full of good things tactfully and effectively grouped and arranged: that's what we think of this window. Others thought so too—and we had some difficulty to get hold of a photo to reproduce it for the readers of GRAPHITE.

The date on the window also arrests attention: not many years after the “Forty-niners,” when California was a synonym for GOLD all over the world, that date brings up old names, old fashions, and stirs the pulse. In business since 1856! Nearly the allotted three score years and ten, and going stronger than ever: and this “the best Dixon window we ever had”: no wonder we’re glad to reproduce it.



FORT TICONDEROGA
Drawn by Earl Hester,
after restoration drawing
by Alfred C. Besson, ar-
chitect.

**The only
rounded-edge
pencil with round-
the-land advertising
support and
round-the-land
demand**

*A Real
Bargain in
pencil satisfaction
to your customers:
as to quality and
price,-pleasing to
their fingers and
their pockets*

ONS

DIXON

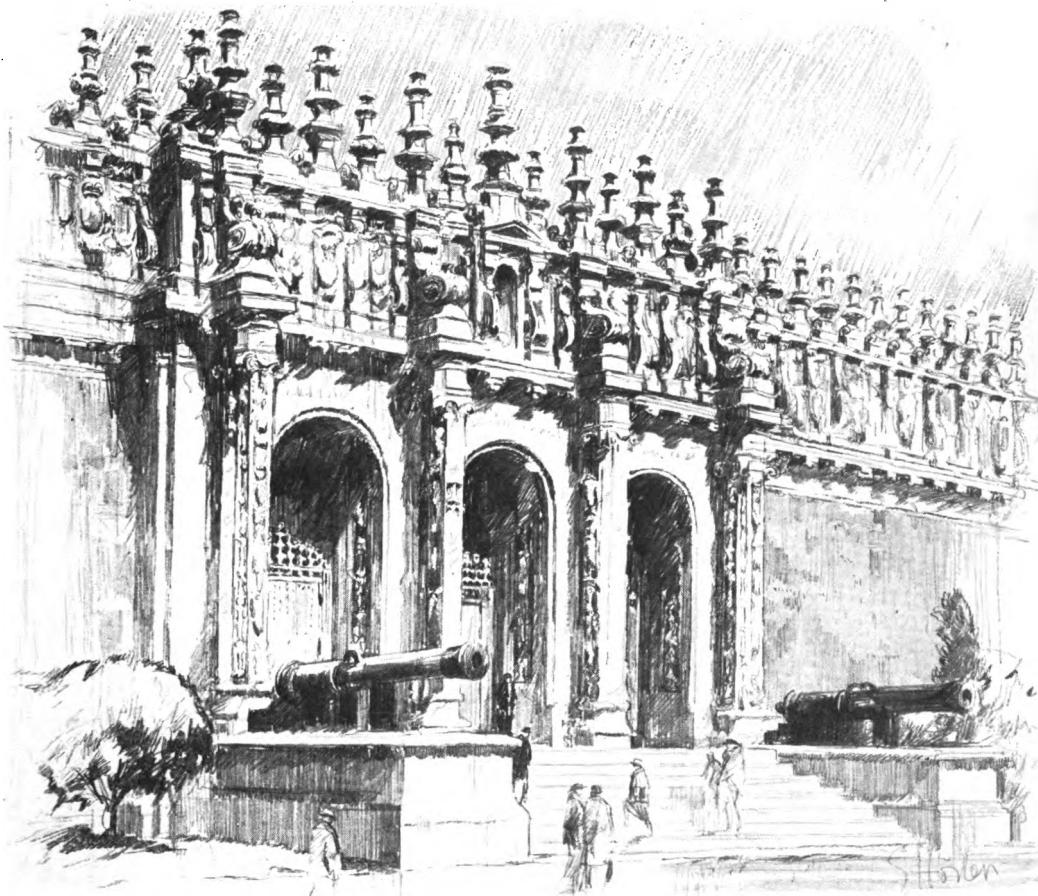
“TI-CON-DER-OGA”

Graphite

VOL. XXV

JULY-AUGUST, 1923

NO. 4



JOSEPH DIXON CRUCIBLE CO.

ESTABLISHED
1827

JERSEY CITY, N.J., U.S.A.

INCORPORATED
1868



*Miners, Importers and Manufacturers of
Graphite, Plumbago, Black Lead*



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U. S. A.

Volume XXV

JULY-AUGUST, 1923

Number 4

MEMORIAL MUSEUM

LOUIS CHRISTIAN MULLGARDT, Architect

"ELDORADO" PENCIL DRAWING by Earl Horter.

WE are indebted to ARCHITECTURAL FORUM for the following extracts from an article, "Some Recent California Architecture," which appeared in their publication.

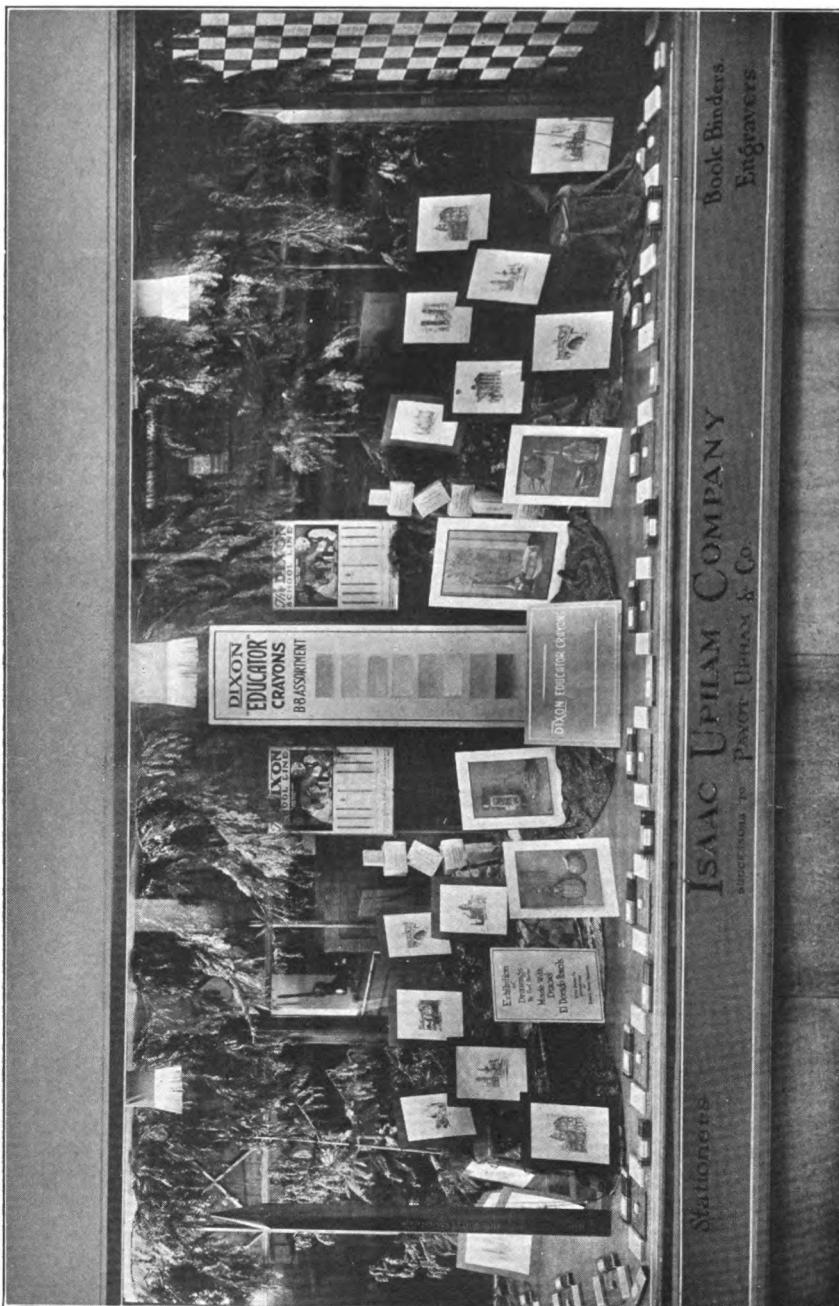
"While various architectural styles are identified in the popular mind with the early history of many of the older sections of the country, there is possibly no part of the United States to which any particular kind of building belongs in quite the same degree as that to which Southern California and the surrounding district may lay claim to the Spanish styles. The earliest builders of structures which yet remain in this region were the early Franciscan missionaries, who dotted the hillsides and valleys of Southern California with their missions and monasteries.

"Visitors to the Exposition at San Diego brought back marvelous tales of the glory of Spanish architecture as there exemplified. The success of these exposition buildings established a precedent which has had a powerful influence in the determining of architectural styles in Southern California and particularly in the case of large buildings of a public or semi-public character.

"Two recent examples of the use of these Spanish traditions in buildings are the work of Mr. Louis Christian Mullgardt, architect, of San Francisco. The more important of the two buildings is the new structure for the Memorial Museum in Golden Gate Park, San Francisco, which came into being largely as a result of the keen interest taken by San Francisco's journalist, Mr. M. H. DeYoung, in the original museum, a relic of the Mid-Winter Fair of 1893. There existed a rare collection of valuable exhibits, the result largely of individual gifts, and the obvious necessity of a permanent museum building has resulted in the structure under discussion.

"Like most of the world's great institutions, the Memorial Museum is to be the result of gradual development and continuous growth. The architect has very wisely planned, therefore, for a building which may be developed gradually and yet which will at no stage of its development appear to be anything but a structure which is finished and complete. The museum is but one of the two parts which will form the completed build-

(Continued on page 80)



DIXON WINDOW DISPLAY, ISAAC UPHAM COMPANY, SAN FRANCISCO

Isaac Upham Company Window Display

During, N. E. A.

WE were very much gratified to receive a photograph of the window display featuring Dixon's EDUCATOR crayons sent to us by Mr. L. H. Lobenstein of the Isaac Upham Company of San Francisco.

Shortly after we received this photograph, our Mr. L. A. Wagner wrote to us telling us what a fine picture the window made and how much attention it attracted.

It is very easy indeed to understand that this must certainly have been the case—even the black and white of the photo shows a clever arrangement and an interesting grouping and balance.

Mr. Lobenstein writes us concerning the window, as follows:

"The checker effect on the right was made with empty B-8 boxes. The greens in the background are boughs of our native redwood. The design at the edge of the window was made with B-8 boxes, 308, 312, 722 pencils and No. 40 ELDO-RADO eraser and a 2-H ELDO-RADO pencil at the edge. The lights were hooded with orange crepe paper and the Horters were mounted, as previously stated, on cover paper of the same tone."

In another letter Mr. Lobenstein refers to the four drawings which were made by pupils in the Oakland City Schools under Miss Boone with Dixon's EDUCATOR crayons. These still life groupings are very well done indeed and they show something of the possibilities of Dixon's EDUCATOR crayons in the hands of pupils in the public schools. They reflect a great deal of credit on those who did them and on the supervisor.

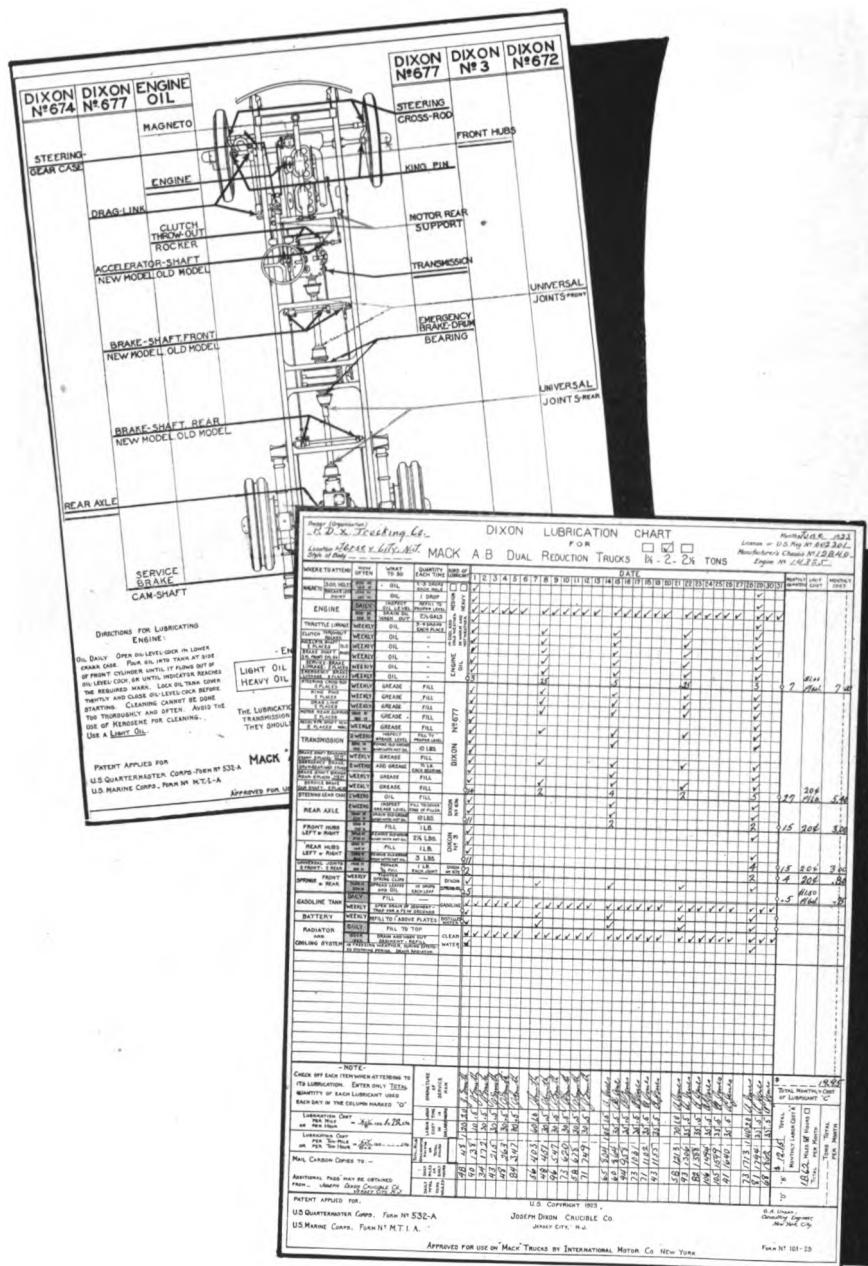


Alfred T. Smith Passes Away

IT was with deep regret that we learned of the death of Mr. Alfred E. Smith on June 22nd, at his home in Webster Groves, Mo., after an illness of ten days.

Mr. Smith had been with the Dixon Company since February, 1917, as a salesman in the St. Louis Sales District. Prior to this, he had been in the real estate business, and from 1890 to 1904 he was deputy revenue collector for the St. Louis District.

Even though Mr. Smith had not been with us a great number of years, he had thoroughly established himself with his trade, and will be missed by all. We mourn his loss, and extend our sincere sympathies to his widow and family.



PIXON LUBRICATION CHARTS

Dixon Lubrication Charts for Mack Trucks

IT is a well-known fact that satisfactory performance of any motor vehicle is only possible if the various moving parts are lubricated at proper intervals and with a lubricant suitable for the part in question. Instruction Books usually give advice how to accomplish this, but experience has shown that it is difficult, if not impossible, to follow these instructions because they are not readily understood.

We have given considerable thought to the most practical way of insuring satisfactory lubrication without resorting to a complicated system involving the keeping of complicated records. The outcome of our investigations have been the Dixon Lubrication Charts, which we feel represent a simple and practical solution of the lubricating problem confronting the operating head of a fleet of trucks.

The first of this series is for Mack trucks as follows: "A.B." Dual Reduction, $1\frac{1}{2}$, 2 and $2\frac{1}{2}$ tons; "A.B." Chain Drive, $1\frac{1}{2}$, 2 and $2\frac{1}{2}$ tons, and "A.C." Chain Drive, $3\frac{1}{2}$, 5, $6\frac{1}{2}$ and $7\frac{1}{2}$ tons. The charts shown on page 78 of this issue of GRAPHITE are for "A.B." Dual Reduction trucks.

These charts have been prepared in pad form with carbon paper to obtain copies for office records. They are bound with heavy cardboard so that the pad can be conveniently carried on the truck. On the inside cover is a chassis diagram showing the location of the various parts, what lubricant to use and how often. The record charts are arranged to cover an operating period of one month and there is a sufficient number for originals and carbon copies for a year, together with sufficient

extra sheets to take care of spoiled copies.

In order to draw attention to the recommended frequency of attention, the lines and arrows indicating the different parts on the diagram are shown in five different colors, each color corresponding to the desired frequency of lubrication. The same color scheme is employed on the column headed "How Often."

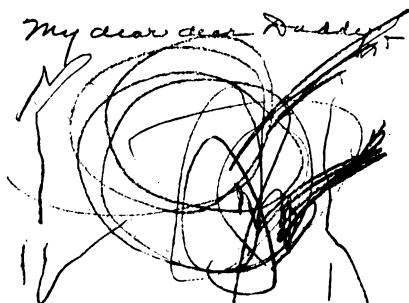
To facilitate the work of the oiler, the parts needing attention are grouped under the lubricant to be used for that part. The grouping is also such as to enable the oiler to work around the chassis beginning from the left front side, back to the rear and then to the front of the right side.

The charts are intended to act primarily as a guide for the oiler and to assist him in his work in properly lubricating the chassis. The diagram showing the location of the various parts simply serves as a permanent reminder.

In addition to facilitating the proper lubrication of the chassis, the charts provide also a handy method of obtaining lubrication records. The number of entries to be made either by the oiler or preferably by the foreman is small. It is only necessary to check off the parts lubricated each day, to enter the total quantity of each lubricant used in the columns marked "O," the time required for lubrication and the daily mileage.

At the end of each month a copy of the record so obtained is sent in to the office, which is then in a position to obtain the total monthly lubricant cost "C," the total monthly labor cost "A" and the total monthly mileage "B." The lubrication cost per mile

(Continued on page 90)



A Noble Deed

FEW of the hundreds of friends of Ralph R. Belleville, one of the representatives in the Philadelphia Sales District, knew that he had a little three-year-old daughter, Betty.

It gave real honest-to-goodness pleasure to all of Ralph's friends at the Cleveland Foundrymen's Convention to see the smile of joy and satisfaction that overspread his Eddie Foy-like countenance when receiving his home letter and reading the one shown at the top of this column.

There can be nothing more pleasing to the One who said "Suffer the little children to come unto Me" than can be this noble and self-sacrificing deed of Ralph R. Belleville.

Belleville, we envy, and we honor you!



THE HELPFUL RECRUIT.—"You told me to file these letters, sir," said the new yeoman.

"Yes," returned the officer.

"Well, I was just thinkin' that it'd be easier to trim 'em with a pair of scissors."—*Mississippi Bulletin*.

Memorial Museum

(Continued from page 75)

ing. Midway between the two pavilions, which will be connected by a smaller gallery, is to be a square tower, which will dominate the group and upon which will be lavished the wealth of ornament and symbolism which is already used upon the part of the museum which is already built.

"The purpose for which the building exists makes necessary large wall surfaces which form a most effective contrast for decoration massed about doorways, at the corners of the building and in the broad frieze or cornice which extends around the four sides. The high symbolism which is worked out in the frieze and about the entrance portals portrays the development of California and the progress of civilization and the arts. This history in symbol begins with the depiction of plant and animal life, then deals with the early aborigine with his spear and string of fish. In the later development of the symbolism appear the early explorers and the Spanish friars, then the pioneers of '49 who came with pick and gun for gold but who stayed to build the basis of the commonwealth. All this sequence of symbolism leads up to its culminating architectural expression in a figure of Superior Intelligence, type of the justice and progress of the world."

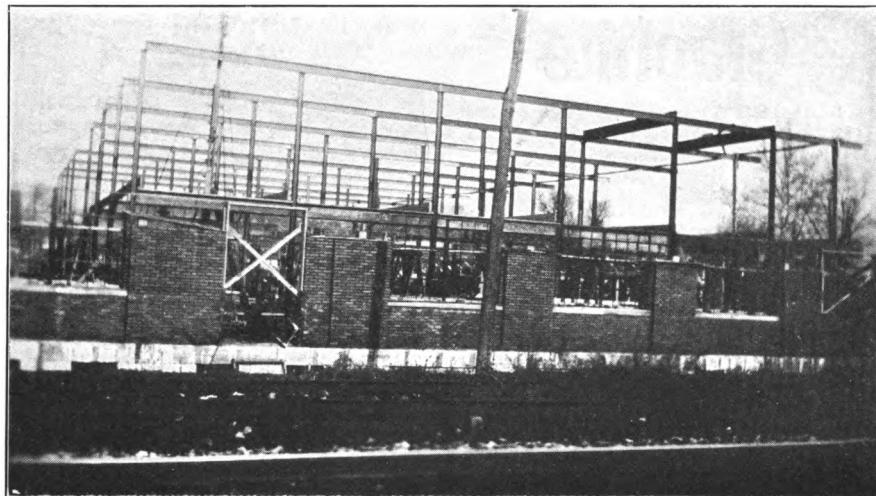


AGREEABLE.—"If I lend you ten dollars, what security will you be able to give me?"

"The word of an honest man."

"All right, bring him along, and I'll see what I can do for you."

—*Banther*.



Armstrong Mfg. Co.

Huntington, W. Va.

THE illustration shown above is the new building of the Armstrong Mfg. Co., Huntington, W. Va. The architects were Robert L. Day and Sydney L. Day. The structural steel was fabricated and erected by the Huntington Iron Works of Huntington, W. Va.

Dixon's Silica-Graphite Paint was used for both the shop and field coats. The Huntington Iron Works have used Dixon's Paint on many other jobs and know that it will give their customers better and longer protection than cheaper paint.

While it would have been a very simple matter for them to use a cheaper paint as the steel work is covered by brick, they have used only the BEST knowing that it will be the most economical in the end. Their reputation as fabricators and erectors of structural steel is very high and will be further enhanced by their good judgment in the use of Dixon's Paint.

A Long Trip for Crucibles

WE frequently have orders for Dixon Crucibles to be sent to distant points, and have even had to pack them specially for carrying in packs on donkey-back.

The following letter from our Chilean representative, Mr. T. N. Chambers, Santiago, tells of trip that is most unusual.

"I herewith enclose order from Mr. W. Wilson, of Quellon, Island of Chiloe.

"Please forward these crucibles to me by parcel post, and I will see that they are duly forwarded to Mr. Wilson. There are no postal arrangements to the out-of-the-way place where he lives, so I have to send them to his Agent in Puerto Montt.

"It may interest you to know that the crucibles are to be used by Mr. Wilson at his gold and platinum mine at Quellon. This place is merely a bay in the southern end of the island of Chiloe. To get to this place, one has to travel over 1,000 KM. by

(Continued on page 94)

Graphite

PUBLISHED BI-MONTHLY BY THE
JOSEPH DIXON CRUCIBLE CO.

AT JERSEY CITY, NEW JERSEY, U. S. A.

*In the interests of Dixon's Graphite Pro-
ductions, including Crucibles, Lubricants,
Pencils, Paint, etc. Sent free upon request*

Vol. XXV JULY-AUG., 1923 No. 4

Important Notice!

WE earnestly desire to place in the hands of every person or company who uses, sells or is otherwise interested in Dixon's Products, our house magazine, GRAPHITE.

Few requests have been made of our readers in the twenty-five years of publication but we now make one that will not take a great amount of anyone's time and the result will mean much to us.

This request is to please fill out the postal inclosed with this issue and return it to us. Particular attention is directed to the line, "Dixon's Products Interested In." Won't you be sure to fill this line in as we are endeavoring to classify our readers along this line. Also be sure to indicate whether or not you wish to continue to receive GRAPHITE.

We wish to revise this list to eliminate those copies which are not now delivered because of change of address and other reasons. While we want every person having use for GRAPHITE to continue to receive it, we do keenly desire to eliminate all possible waste.

Won't you please help us by giving this matter your immediate attention and filling in and returning the postal now?

A Testimonial for 672 Grease

DIXON'S Grease No. 672 has not been on the market as long as some of our other automobile lubricants, but nevertheless it has won an enviable reputation for keeping the universal joint well lubricated.

The following letter from Mr. James McEwing, Proprietor, "The Half Way House," Seattle, Washington, speaks for itself.

"On October 17, 1922, I purchased some of your Universal Joint Grease No. 672, and shortly afterward I put this grease in the two Spicer Universal Joints on my Studebaker car.

"I had been using a good grade of cup grease for this purpose, and refilling the universal joints about once a month. I have not had to replace the original filling of your No. 672 for a period of six months, which has proven that it will outlast ordinary grease by a very large margin, not only making it cheaper to use, but also eliminates the tendency to splash out on the running gear. Both universal joints are in perfect condition and still have sufficient of the original to last for some time yet.

"I am always glad to recommend a product that can so conclusively prove its merit, and have given your salesman an order for another supply of this grease."



TAKING A CHANCE.—Magistrate of Irish Court (after a turbulent scene amongst general public)—"The next person that shouts 'Down with England,' I'll have thrown out into the street."

Prisoner (excitedly)—"Down wid England!"—*London Opinion.*



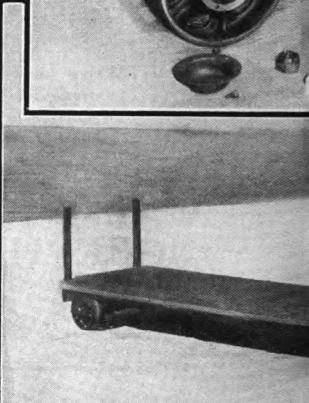
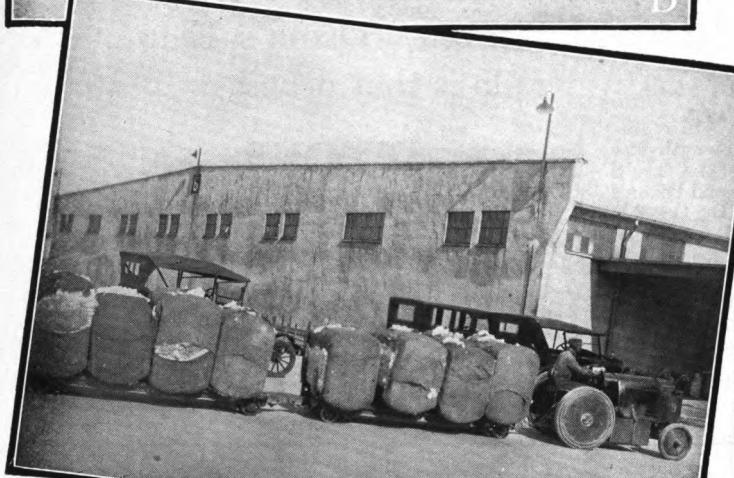
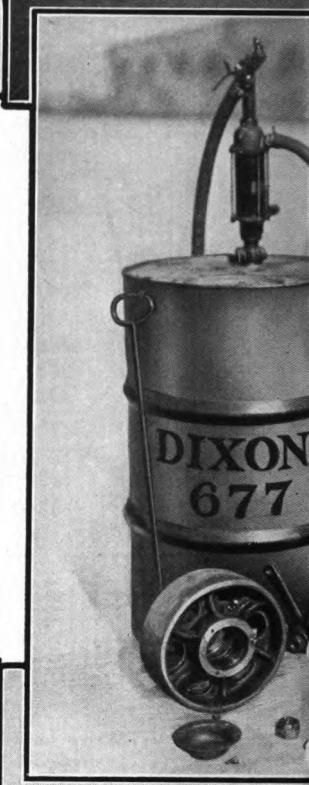
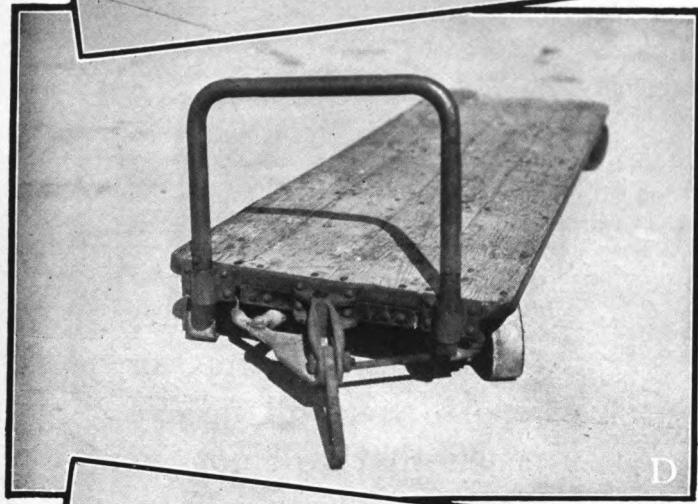
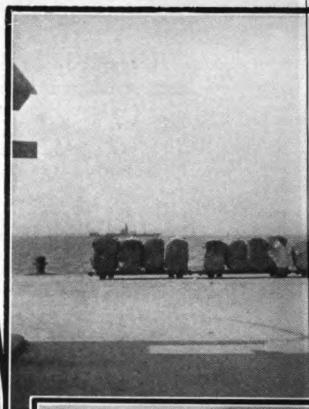
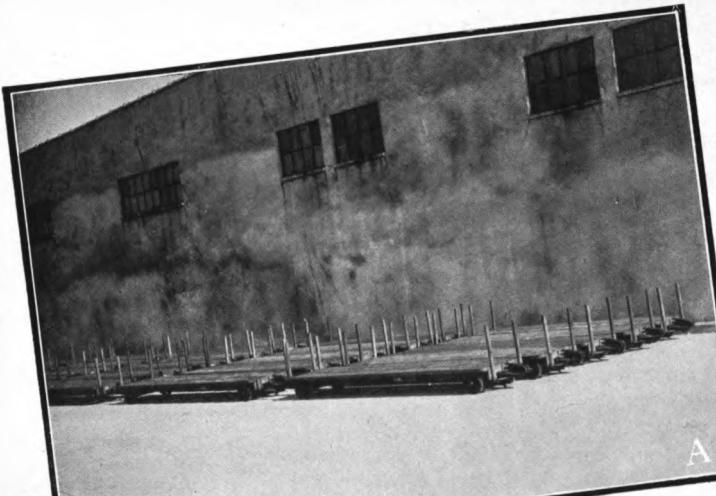
WHEN making notes for a special memo. or report, you will need a pencil that will not interrupt. Dixon's Eldorado is that pencil.

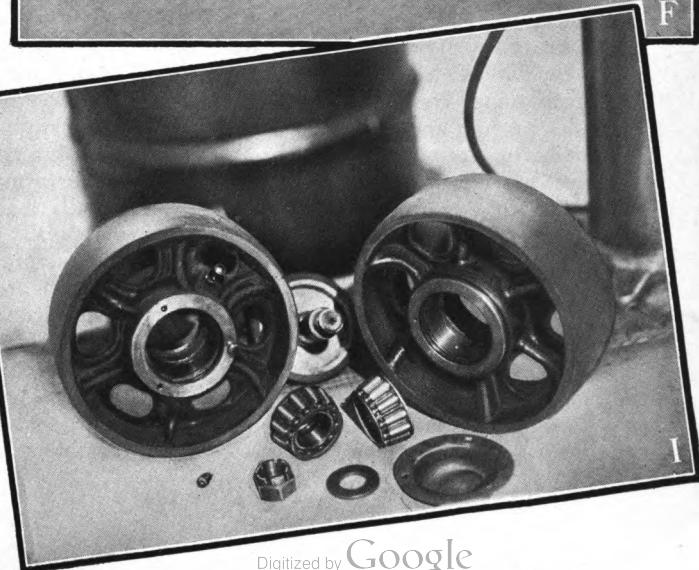
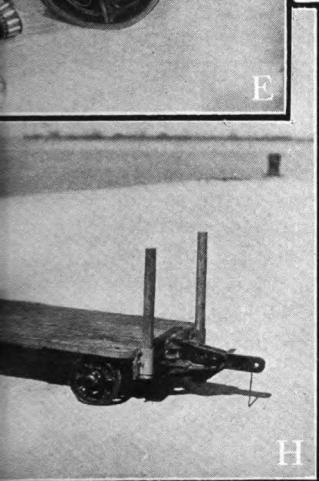
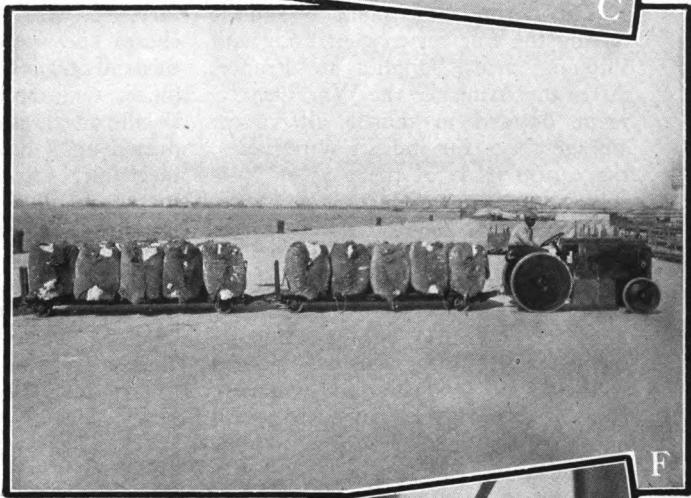
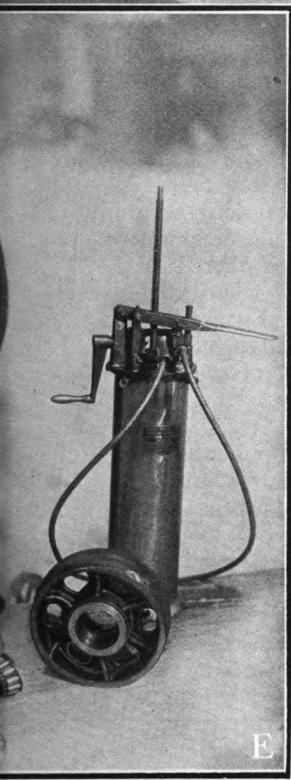
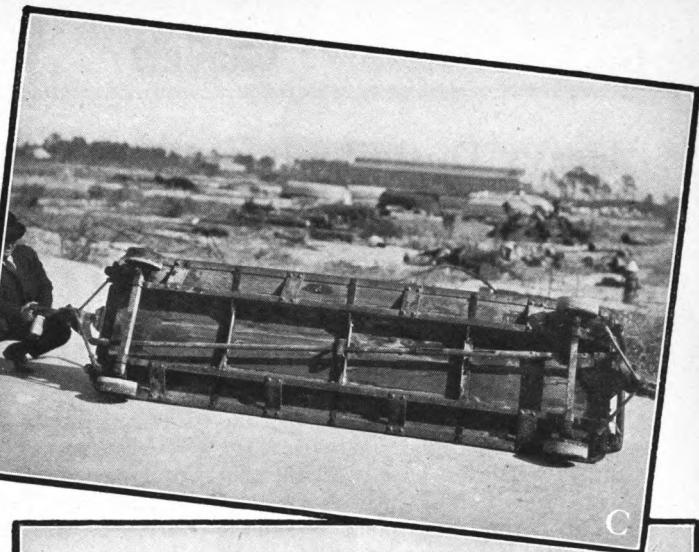
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Write for full-length free samples of DIXON'S ELDORADO and Dixon's "BEST" COLORED PENCILS. Both are supreme in their field.

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"the master pencil"

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Heavy Duty Trailers With Roller Bearings Speed Up Handling Bales of Cotton

L. F. BRUCE, President
Norfolk Warehouse Corporation

A NEW problem in industrial hauling came to light when the Norfolk Warehouse Corporation of Norfolk, Va., built a cotton compress plant in connection with large storage facilities leased at the big Army Supply Base near Norfolk.

This Army Base plant was built during the war for concentrating and shipping army supplies to France. After the Armistice the War Department decided to release all vacant storage space for industrial purposes, the cotton trade of the port of Norfolk taking over room for the storage of approximately 200,000 bales of cotton.

The plant consists of eight units about 150 feet wide by 1,700 feet long, divided into twelve compartments each; all served by railroad facilities on one side and concrete roads on the other. In such a layout the distances are great indeed. In addition to the warehouse units there are two enormous deep water piers capable of handling a number of ocean-going vessels at one time, both discharging and taking on cargo. Water-borne cotton cargoes are assembled at ship side on these great piers, and the cotton is hauled to them from varying distances: the longest haul being 4,400 feet, with the average somewhere around 2,500 feet.

Since before the Civil War all cotton in the port of Norfolk had been handled by the old familiar hand-truck with negro laborers as the motive power. It was a jolly crew

in the old days of short trucking distances and cheap labor; but the new situation demanded radically different treatment.

A survey of available mechanical equipment did not offer a solution; hence, something new became necessary. It was found that for quick, cheap, and accurate handling, an industrial trailer 10 inches high, 36 inches wide and 10 feet long would be the ideal, and such a design was drawn up. This design offered some mechanical troubles due principally to the small wheels. A compromise was made by using 10-inch wheels, and making the height of the trailer 12 inches from roadway to top of loading platform.

With such small wheels the "caster" type of trailer was automatically eliminated. It also being necessary to have trains which could be hauled from either end only the "four-wheel-steer" type was suitable and practicable for existing conditions, and this type was adopted. After two years of constant supervision and study this equipment has now been brought up to reasonably efficient performance.

Originally 125 trailers were used, equipped with roller bearings and hauled by storage battery tractors. Later on gas tractors, with special design water cooled mufflers and fully protected engine were tried out, and have largely replaced the storage battery tractors, on account of greater speed, larger hauling capacity, and more flexible operation. The differ-

ence in speed of train movement between three miles per hour by electric tractor and ten miles per hour by gas tractor is a valuable asset for this operation. Both type of tractors are in use now; the electrics for short haul and the gas for continuous long haul.

Speed of train operation and amount of equipment needed is determined by the maximum output of the compresses, which varies from 90 bales per hour to 130 bales per hour per press. Wherever located on the plant, and wherever it must be delivered after compression, the incoming flow, and distribution of compressed cotton (or the outgoing flow) must never retard the operation of the compresses. A loss of only a few minutes at a press means a loss of many dollars.

This season the Norfolk Warehouse Corporation's equipment consists of 175 Lakewood Trailers, six gas tractors, and four Lakewood electric tractors. The trailers are equipped with cast steel wheels, using adjustable heavy duty Timken tapered roller bearings. Dust-proof design keeps the bearings free from the cement dust raised by the train movement over concrete. All parts are lubricated by Alemite pressure system using Dixon's Lubricant No. 677. Operating results with the present equipment are satisfactory.

Trains of six trailers each are run. Each train is a unit, found to be the proper length for this operation. Each trailer carries four bales of cotton, or an average load per trailer of 2,000 pounds going to the compress. After compression five bales are loaded per trailer due to the decreased size of the bales, making an average load of 2,500 pounds per trailer.

Service station and charging plant is maintained in charge of competent mechanics to keep all equipment in proper operating condition.

The equipment and operation is probably as unique an installation as will be found anywhere in connection with cotton handling.

The foregoing article appeared in the April, 1923, issue of RAILWAY PURCHASES AND STORES, and it is with their kind permission that it is reprinted here.

We are also in receipt of a letter from Mr. L. F. Bruce, President of the Norfolk Warehouse Corporation as follows:

"After a year's experience with Dixon Lubricants and about six months' close contact with your engineering department, our industrial hauling equipment is now performing efficiently. Your assistance has been of great benefit to us in putting our ideas into practical working shape and we appreciate your co-operation.

"As you will note from photographs going to you we had very expensive upkeep on our equipment, which from the nature of our work gets very hard usage. All of our original trailer equipment, which was designed for electric tractor hauling at a speed of three or four miles per hour, was re-designed last summer to stand up against gasoline tractor speeds up to ten and twelve miles per hour.

"In making the change the most important items of design were the wheel-bearings, and their lubrication. Heavy duty Timken bearings were chosen as the best for this problem. We placed an order for new trailers of improved design with the Lakewood Engineering Company, of Cleveland, instructing them to be guided by the advice of Timken and Dixon engineers. They adopted the many good suggestions as to design of wheels, and dust-tight provisions for bearing protection, as recommended by your engineer. By getting the three concerns to co-operate

closely we were able to get trailers built to operate according to our specifications and needs.

"Since this equipment was completed we have been helped and advised by your lubrication engineers in working out lubrication schedules, testing lubricants after certain amount of use, etc., and the whole problem is now down to an economical operating basis.

"No doubt in time further changes and improvement will become necessary and when that time comes we will avail ourselves further of your excellent advice and help."

The photographs referred to in Mr. Bruce's letter are shown on the center spread of this issue of GRAPHITE.

They are explained as follows:

PHOTO A—Part of new fleet of 50 trailers; six trailers to a train.

PHOTO B—A train load on the way to the compress.

PHOTO C—View of underside of trailer and steering gear. Four-wheel steer throughout with spring in drag link to take up lost motion. Note wheels out of alignment, due to bearing wear at higher speed of gas tractors. Original design trailer.

PHOTO D—View of original design trailer showing wheels worn and badly out of line. Also shows 2-inch pipe end racks which were too long and strong and caused bending of trailer end frames when cotton pressed against them, due to striking obstructions.

PHOTO E—View of wheel assembly, showing large drum of Dixon's 677 used exclusively on all 175 trailers at all points where lubrication is necessary. At right, high speed grease gun for lubrication service. All movable parts, besides wheels, are bushed and fitted with grease nipples, all lubricated with Dixon's 677. Laboratory tests made so far show no lubricant deterioration or wear on Timken bearings.

PHOTO F—Close-up of trailers loaded with five bales each of STANDARD

compressed cotton after leaving compressing machine.

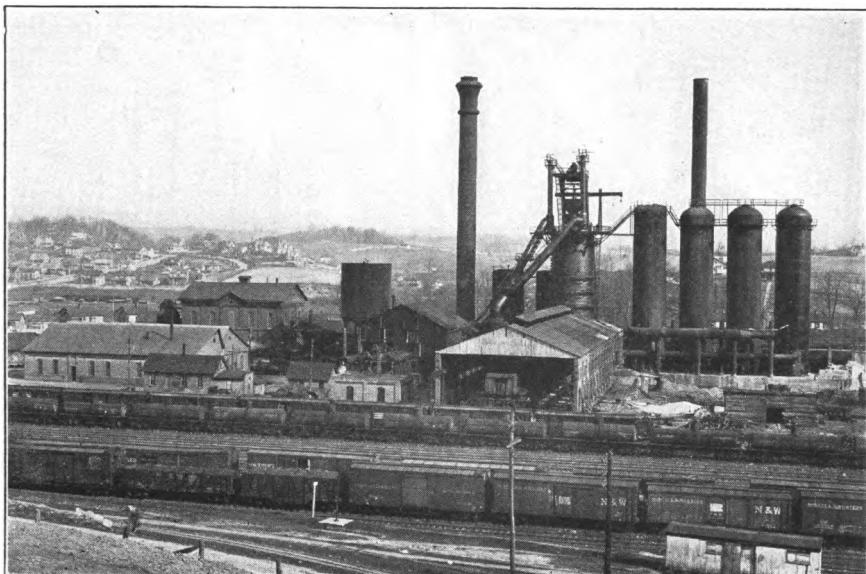
PHOTO G—Close-up of loaded train with cotton ready to be compressed. Shows four bales per trailer and how they fit together on trailer body.

PHOTO H—New trailer, showing bolted-in type of coupling pin. New design cast steel wheels and extra braces to center channel iron frame. Cast stake pockets riveted into frame.

PHOTO I—Wheel on left shows outside edge of hub finish with machine screws, drilled and wired to hold dust cap snugly. Nipple fitting for filling with lubricant. There is a drain plug opposite the fitting for cleaning out bearing lubricant without removing wheel from axle. On the right is another cast steel, crown face, wheel, showing inside of hub end design. This part of the wheel is grooved to carry a piston ring for dust prevention. In the center is shown steering knuckle, and spindle which carries bearings and wheel. Piston ring revolving with the wheel fits into grooved part of steering knuckle. In center are shown heavy duty Timken tapered roller bearings used, together with castellated nut and washer for adjustment of bearings. Also dust proof hub cap.

All of the Norfolk Warehouse Corporation's trailers are now lubricated exclusively with Dixon's 677, and equipped with Timken bearings in the wheels. Speed of trains has been increased to 10 and 12 miles per hour with approximately 40 per cent reduction in cost of gas tractor operation, due to savings in gasoline and oil, brought about by using the proper bearings in conjunction with the most efficient lubrication.

Our Lubrication Engineering Department is at the call of others who have lubricating problems such as that above. They are in a position to render the same type of high grade service and advice, and recommend ways and means to lower transportation costs.



Pulaski Iron Co.

Pulaski, Va.

MR. M. E. BOWMAN, Treasurer of the Pulaski Iron Company, Pulaski, Virginia, writes us as follows:

"We have painted our entire plant with your Silica-Graphite Paint. The accompanying photograph shows the two draft stacks, the furnace proper, the six stoves, boilerplant, tanks, gas mains, down comers, etc., all of which are coated with Dixon's Silica-Graphite Paint.

"We find this paint is holding well and consider it is much better adapted for our work around the furnace than some of the other paints which we have used."

It is pleasing to receive such letters as the foregoing as it bears out our argument that Dixon's Silica-Graphite Paint is the best there is. The conditions to which it is sub-

jected at this plant are trying. Here are encountered smoke and fumes that would cause most paints to crack and peel within a short time. We are confident that the Pulaski Iron Company will be better pleased with their choice as time goes on and Dixon's Paint continues to hold up as well as when first applied.

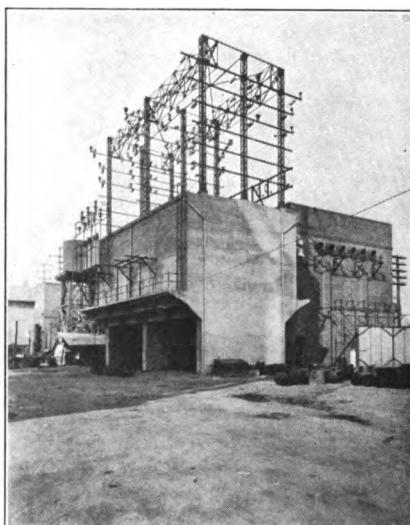
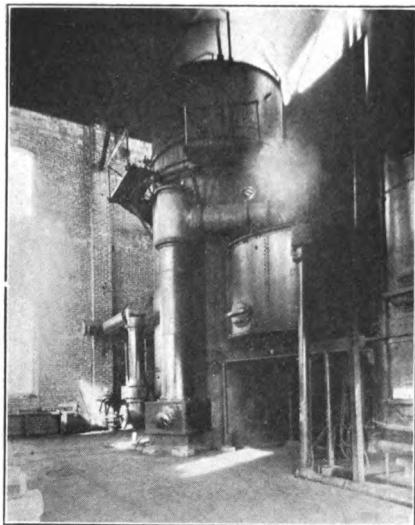


Hydraulic Plunger Elevator Lubrication

BELOW we quote letter from the Washington Elevator Company, Seattle, Washington, who are builders of freight and passenger elevators.

"Last August we purchased from you some waterproof graphite grease. Kindly advise if you can furnish us with some more of this same kind.

"We have found this the best grease of any we have ever used on hydraulic plunger elevators."



Central Arizona Light and Power Company

Phoenix, Arizona

OUR Mr. W. F. Rogers, of the San Francisco Sales District, has sent in the two photographs above. They show the plant of the Central Arizona Light and Power Co., Phoenix, Arizona.

All of the steel work on the substation (illustration on right), and all of the iron work shown in the other picture are painted with Dixon's Silica-Graphite Paint.

Silica and graphite, the pigment of Dixon's Paint, most successfully withstand deteriorating agents of all kinds such as weather, gases, etc. This pigment is inert, and does not chemically combine with the vehicle which would result in a brittle coating.

All metal or wood work properly painted with Dixon's Paint will be protected for a longer time than if other and cheaper paints are used.

Dixon Lubrication Charts

(Continued from page 79)

can then be readily computed by means of the formula shown on the chart and if tonnage records are kept, also lubrication cost per ton mile.

In order to show the simplicity of using the charts, a sample chart on page 78 is shown filled in.

The check marks, vertically and horizontally written figures show exactly how much of the entry work has to be done in the shop. The remaining figures (slanting) are computed in the office.

The records which it is possible to obtain with these charts will enable the operator to determine the actual lubricating cost, a comparison of this lubricant cost with the mechanical maintenance expenditure will clearly demonstrate the fact that the vehicle properly lubricated will show a considerable lower maintenance cost than a vehicle which has not been properly attended to.

The Difference Between Ferrous and Non-Ferrous Metals and the Care of Crucibles in Brass Foundry Practice

(Continued from May-June)

One concern producing over 100,000 pounds of Red Brass Castings per day, uses crucibles exclusively and has so far resisted the overtures of Open Flame and Electric Furnace Builders toward making a change. Other concerns producing only a few thousand pounds of castings per day, have adopted one or the other of these newer types.

I believe that crucibles will melt a large part of the Non-ferrous alloys in brass foundries till the economics of the electric are better understood and its cost of installation approaches closer to that of Pit Furnaces.

In connection with our service section to users of Ajax-Ingot, I have visited many brass foundries and one of the things which is sometimes in evidence is the lack of proper handling of crucibles from the time they are received, till they are put out of commission by mis-use.

Take for example the proper storage, drying and annealing of crucibles.

Due to war conditions, the Ajax yearly crucible expense, which in 1914 was about \$25,000—had in 1918 amounted to \$120,000. The average heats per crucible had dropped from 30 to 14 and advancing prices made up the balance.

We had at the time what we considered was a good annealing oven, but a close study showed that it might be improved. A plan was decided upon and a new oven rushed to completion, with the result that within three months the average life of the crucibles went from 14 to 21 heats, thus effecting a gross annual saving of \$39,000.

The oven cost about \$3,500, and the fuel bill the first year was \$1,200, making a net saving of a little over \$35,000.

We have continued to operate the oven with very gratifying results, the average heats per crucible now being 55. We do not claim that this great increase in the life of the crucibles is entirely due to the oven, because the quality of the crucibles today is much better than before the war, but we are satisfied that the use of the oven adds 25 per cent. to the number of heads obtained.

Tale another example in which the furnaces and crucibles were the same, but proper care was not given the crucibles. A concern which had purchased some of our furnaces and had, after their installation, continued to buy crucibles from us, complained that the crucibles were so poor that their plant was unable to maintain production. We wrote inquiring about their oven and they stated it was all right, but that the crucibles scalped, cracked and leaked to such an extent that their average life was only six heats.

We suggested that they return for examination some of the crucibles which had failed and also some new ones that we might test them out in our plant. The old crucibles were about as bad a looking lot as I ever saw, but an examination of the twenty-three new ones returned for test, showed that fifteen of them were pre-war stock—the real ceylon graphite and German clay kind.

We put them through our oven, giving them special attention and thereafter used them in our regular way, with the result that the average heats obtained per crucible was 36, the old stock having an average of 39.7 and the war stock 29 heats per crucible. The result of this test determined us to make an investigation of the trouble at the source.

The concern was located in a region where fuel was cheap and, as they always carried steam, they had steam heated a room which was constructed of wood. The wood had shrunk and the steam pipes were leaking live steam, while the temperature of the room was only 180° F. The crucibles were nicely arranged on open racks so that the moist, cool air had all the chance in the world to get in its work.

These facts were pointed out and our oven described to them. They sent a man to examine it, we supplied them a print, they put up an oven similar to ours, and the trouble ceased.

I cite this case because it was as bad as any which has come under my observation.

In some foundries it is the practice to stack the crucibles on top of core-ovens, furnace flues, or other warm places, while in others they are stored any old place. I have seen them stacked in part of the coke shed, the first layer standing on the dirt floor.

When annealing, a common practice is to set new crucibles which are to be used the next day, on top of the furnaces after the heats for the day have been pulled.

This procedure is all wrong. Whenever I see this done to a No. 70 crucible, I can visualize a hard-earned two-dollar bill going up the stack.

But even if the storing, drying and annealing is correctly done, the story is only partly told, because the life of any crucible is determined more by the number of hours it is in use, than by the number of heats run.

It behooves the brass founder then, to get his heats out in the least possible time and to do this he must get a battery of furnaces which will heat quickly. In many of the foundries the furnaces are in a row and all connected to a single horizontal flue with a stack, either in the center, or at one end of the flue.

With such a layout, each time one furnace is opened, the draft of all the others is reduced. To avoid this trouble, each furnace should theoretically have an individual stack. Where this is not feasible, the number of furnaces per stack should be limited to two.

To obtain quick-acting furnaces, the design must be right. First decide upon the fuel and draft to be used; then the ratios of the Bilge to the crucible, to the inside diameter of the furnace, fuel space

to the metal to be melted, grate area to area of furnace flue, grate area to stack area and diameter of stack to its height, must be determined.

On Plate "2," figure 1, a cross section of such furnaces is shown, using coke and natural draft. This design has two furnaces per stack and with a battery of eight furnaces I once took out fifty-two heats of one hundred eighty pounds each in a ten-hour day. The average day's run was from forty-five to forty-eight heats.

To accomplish this, the covers, flues and stacks must be tight and the furnace linings maintained in good shape.

If the furnace lining is run till it gets in such shape as shown on Plate "2," figure 2, the furnace will be slower, at the same time requiring more fuel.

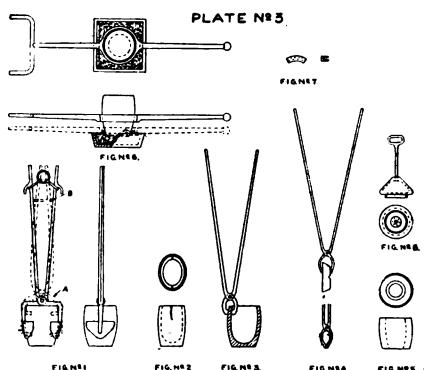
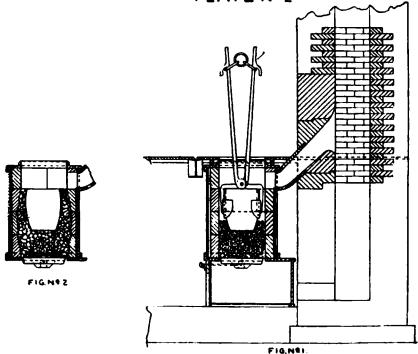
This design of Pit Furnace will melt three pounds of metal per pound of fuel.

Many Pit Furnaces can make only three heats of the above size per day, while the fuel consumption is usually about one pound for each two pounds of metal melted.

I have come across several foundries where the fuel consumed was pound for pound to the metal melted and in one case the owner admitted to two pounds of fuel per pound of melted metal. These conditions mean a large investment in equipment, waste of fuel and reduction in the number of heats per crucible.

Let us assume that the crucibles are properly stored, dried and annealed and that the right kind of furnaces are provided. This will give the crucibles a

PLATE N°2



fair start, but from now on they are at the tender mercies of the Furnace Men and the equipment provided for handling

them. Much damage is done to crucibles through wrong tongs and carrying shanks.

On Plate "3," figure 1, is shown two pair of tongs in position for pulling a heat.

The tongs shown in dotted lines have prongs for gripping the crucible, are the wrong shape at A and depend upon a link B, for securing tension on the crucible. Their defects are as follows: The prongs are not of sufficient area to distribute the pressure on the crucible, the shape at A is such that should they be placed too low on the crucible, the tongs will grip the top of the crucible, breaking pieces out of it and make it the shape shown in figure 2, with the resultant crack. The link at B is often driven down so hard as to put more pressure on the crucible than is necessary for lifting it out. The tongs shown in solid lines on figure No. 1 have spade-shaped prongs which fit the crucible and grip it only below the bilge, the area of the spades being sufficient to distribute the pressure.

The tongs are so shaped at A that they can never grip the crucible at the top, and answer as a guide to insure their being in place. The pressure necessary for lifting is obtained from the lifting tackle through the ring and links on the handles.

These tongs work on the principle of ice tongs and will always exert the pressure required to pull the crucible.

For handling empty crucibles, hot or cold, the tongs shown in figure No. 3 are provided and are so constructed that the crucible is gripped below the top, thus saving breakage.

A third pair of tongs, figure No. 4, are provided for charging pieces of metal into the crucible.

The pulling tongs, figure No. 1, are apt to be sprung through use and to restore them to shape, an iron form, figure No. 5, is provided which is the size and shape of the crucible.

To restore the tongs, place them in the furnace till they are hot, transfer them to the form, secure the handles at the right distance apart and hammer the tongs into shape about the form.

It is necessary to handle crucibles of metal quickly. To this end some sort of a lifting device is required. A simple way to do this is to have a track running over the center of the furnaces and leading to some convenient place for the shank location. An iron block and fall with

chain answers very well for crucibles up to No. 100. For the larger sizes a chain block or air hoist may be used.

The crucible is lifted from the furnace, run along the track to the shank and set in place with the lip in the right position. Figure No. 6.

As soon as the metal is to the right heat, skim, lift shank to position on crucible and pour.

The form used for shaping up the lifting tongs is also used for keeping the shank in condition. When the crucible wears small, a couple of clips, figure No. 7, may be placed on the base of the shank to insure the crucible being in the right position for pouring the metal.

When charging metal into the crucible it should never be dropped in, but placed carefully with the tongs provided for the purpose, as crucibles are sometimes broken by dropping heavy pieces into them or placing pieces in such a way that they will constitute a wedge and thus start a crack.

I have cited cases of the abuse of crucibles and tried to show one way in which the trouble may be overcome.

I hold no brief for the crucible makers, for I believe that in so far as proper storage, drying and annealing of crucibles is concerned, they, who possess the better knowledge of their nature, should disseminate this knowledge for the benefit of the foundrymen, and this I do not consider is being done to any great extent. They produce good crucibles and let it go at that.

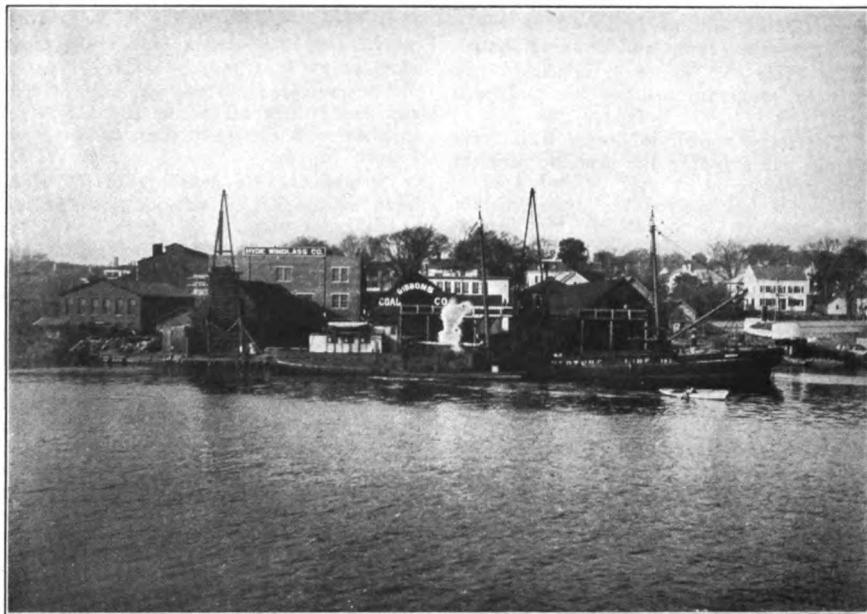
Neither are the producers of foundry equipment doing their best by the foundrymen. Much of the stuff they turn out will get by after a fashion, but if the foundryman wants the best, he is often forced to design and build the tools himself.

Fortunately for the foundryman, he is in the majority of cases able to do this.

It is not my intention, in citing bad cases in regard to the treatment of crucibles, to convey the idea that we are all doing it, because such is not the fact. A very large majority of the Brass Founders give considerable attention to their crucibles and many of them have practice equal to that which has been described.

The subject of producing the desired kind of non-ferrous alloy is the most important one with which the Brass Founder has to contend.

(To be continued)



Gibbons Coal Company Bath, Maine

THE accompanying illustration shows the up-to-date coal plant of the Gibbons Coal Company, Bath, Maine.

This plant is equipped with all modern improvements for giving their patrons the best of service. Following out this plan, Dixon's Silica-Graphite Paint, black color, has been used extensively for protecting the piling along the waterfront.

Wharf owners appreciate the importance of keeping this part of wharf construction well protected. Mr. T. S. Gibbons, President and General Manager of this concern writes us as follows:

"Dixon's Silica-Graphite Paint has proved very satisfactory. When we do any more work we will be in the market for some of same."

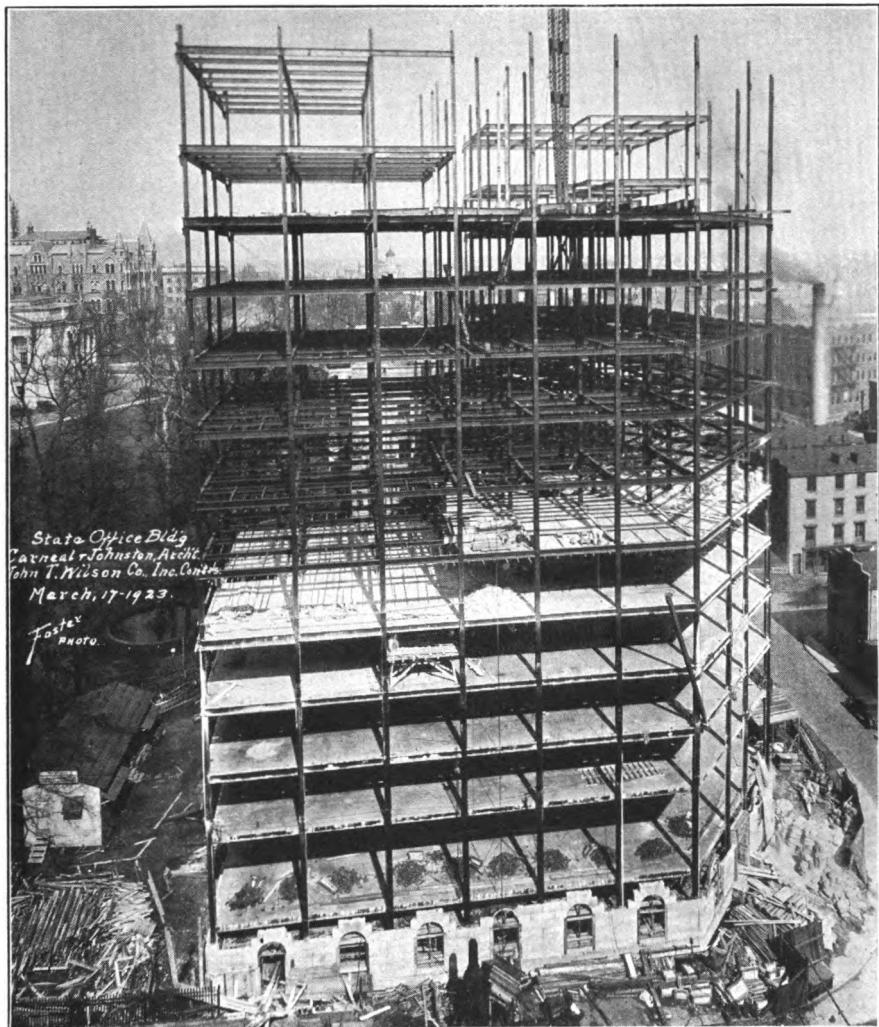
A Long Trip for Crucibles *(Continued from page 81)*

train from Santiago to Puerto Montt. From there one takes a small steamer to Castro, about a day's journey. From Castro, Mr. Wilson has his own private launch which takes him three days to get to the mine. If he strikes rough weather (which often happens), he has to put into a bay and stay there sometimes over a week. It is impossible to get at the place overland, because of the extraordinary thickness of the undergrowth in those virgin forests."



STOP! LOOK! LISTEN!—"Is this a fast train?" the salesman asked the conductor.

"Of course it is," was the reply. "I thought it was. Would you mind my getting out to see what it is fast to?"—*Evansville Crescent*.



State Office Building, Richmond, Va.

THE photograph above shows this building in the process of erection. Each floor will be arranged to suit a particular department's needs and the building conforms in every way to modern construction practice.

The various factors in the designing and erection of the building are: Architects, Carneal & Johnston; Steel

Contractors, Richmond Structural Steel Co.; Builders, John T. Wilson & Co.; Erectors, Lehigh Structural Steel Co.; Painting Contractors, Philadelphia Painting Contr. Co.; and last but not least—Dixon's Silica-Graphite Paint will protect all of the steel work from corrosion of every sort.

DIXON

"TI-CON-DER-OGA"

PENCIL

Its rounded edges make it pleasing to the fingers.

And its fine American name identifies it as the product of a leading American industry.

Made in U.S.A.
DIXON'S TI CON DER OGA 1386-N^o 2

Sales co-operation means ample stock on your shelves to meet the demand... which is growing, Growing, GROWING!

Made in U. S. A. by the
JOSEPH DIXON CRUCIBLE COMPANY
JERSEY CITY, N. J.

PRINTED IN
U. S. A.

Graphite

VOL. XXV

SEPTEMBER-OCTOBER, 1923

NO. 5



Juillet 1922,

à M^r F.G. Guilford,

Cette Dictionnaire du Morbihan.
Je vous prie de faire des compliments à Louis Malteste.

"Dixon's best block"

est un crayon délicieux
On a, avec lui, l'illusion
de faire de la lithographie!

Dixon's Best Block

JOSEPH DIXON CRUCIBLE CO.

ESTABLISHED
1827

JERSEY CITY, N.J., U.S.A.

INCORPORATED
1868



*Miners, Importers and Manufacturers of
Graphite, Plumbago, Black Lead*



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J. H. SCHERMERHORN, Vice-President

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New York, San Francisco, Chicago, Philadelphia, Boston, St. Louis, Buffalo

FOREIGN SALES REPRESENTATIVES

PENCIL DEPT. PRODUCTS

Canada and Newfoundland
A. R. MACDOUGALL & Co., Ltd.,
468 King St., West, Toronto, Ont.

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Cuba and Porto Rico
NATIONAL PAPER & TYPE Co.,
32 Burling Slip, New York, N. Y.
Offices in Principal Cities

Europe, Africa, India and New Zealand
L. G. SLOAN, LTD.,
41, Kingsway, London, W.C. 2
Representatives in Principal Cities

Australia
WILLIAM LEWIS, LTD.,
Stafford House,
316 Pitt St., Sydney, Australia

Philippine Islands
PHILIPPINE EDUCATION Co.,
Escuela 34, Manila, P. I.

GRAPHITE PRODUCTS

WALWORTH INTERNATIONAL Co.,
44 Whitehall St., New York, N. Y.

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London Africa
Milan Johannesburg

Asia Calcutta Shanghai Soerabaya

Latin-America Havana, Cuba Sao Paulo, Brazil
Mexico City, Mex. Buenos Aires, Arg.
Santiago, Chile

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CANADIAN ASBESTOS Co.,
Montreal, Quebec

Graphite

A MAGAZINE PUBLISHED BY THE
JOSEPH DIXON CRUCIBLE COMPANY
AT JERSEY CITY, N. J.
U. S. A.

Volume XXV

SEPTEMBER-OCTOBER, 1923

Number 5

A Breton Girl

Drawn by M. Louis Malteste

See front cover

THE French artist, Mr. Louis Malteste, was so well pleased with Dixon's "Best" Black No. 331 pencil that he made a drawing for a friend, Mr. Albert Bardou, in the Jules Fagard, of Paris, France, organization, which is associated with L. G. Sloan, Ltd., the European representatives for Dixon Pencils.

We are indebted to the artist for a spirited drawing, which we are pleased to have for reproduction. The artist comments on the quality of Dixon's "Best" Black No. 331 pencil, as follows:

Le "Dixon's Best Black" est un crayon deliceux. On a, avec lui, l'illusion, de faire cela lithographic!

If you are not familiar with French, you may be pleased to have a translation of this, as follows:

The "Dixon's Best Black" is a delightful pencil. One has with it the illusion of making a piece of lithography!

The sale of Dixon's "Best" Colored Pencils in France is conclusive evidence of the superior excellence of this line of goods. What France today uses in art, the rest of the world of art

will use eventually. In America, their native country, Dixon's "Best" Colored Pencils have been leading the procession for years. Users and distributors of this superior art merchandise will be gratified to know that another leading American product has been welcomed abroad in the Dixon "Best" Colored Pencil Line.

While our subject is the Breton girl, it may not be amiss to refer to Brittany, the storied maritime province of France. All the provinces of France teem with historical records and picturesque peoples, customs, buildings and landscapes. The province of Brittany glories above all other things in its traditions of a fighting race. From Bertrand du Guesclin down through the centuries, the Bretons have been great fighters; a race of mystics and fighters, lovers of liberty.

So we salute the Girl from Brittany, as befits her, in this rondolet:

Across the sea
You came. Oh waves, go flee
Across the sea,
And greet the shores of Brittany;
And say to Bretons all that list,
That here you'll stay; however missed
Across the sea.



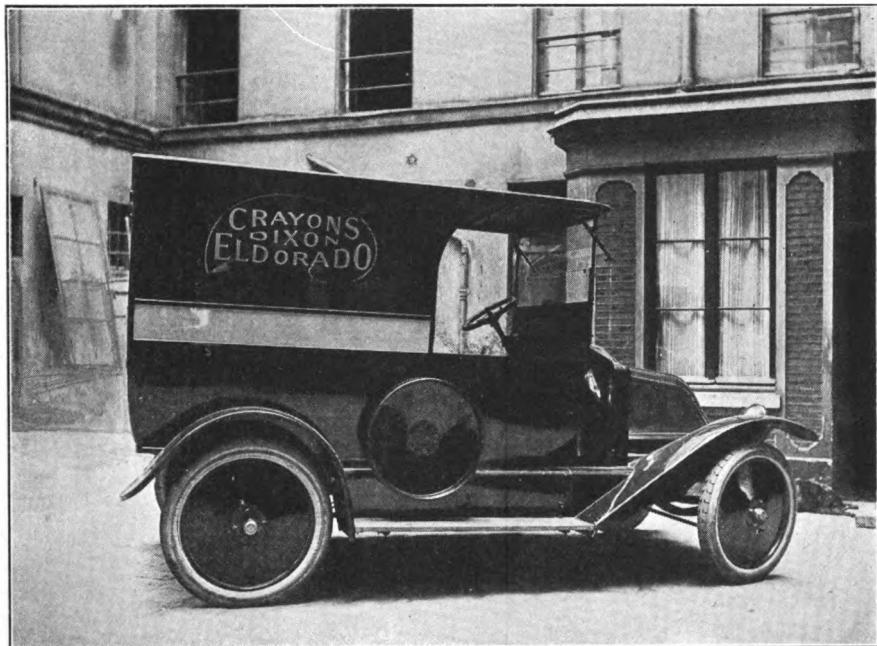
A Dixon Pencil Window in Paris

THE alert Mr. Jules Fagard has sent us a number of window pieces, designed for use in France, which advertise Dixon's ELDORADO, "the master drawing pencil." Each one sparkles with that brightness and grace one associates with French productions. The window of B. Garfunkel shows some of these pieces arranged and displayed to fine advantage.

The effect of using one or two good

pieces over and over again in a window, which is practiced to some extent in window dressing in this country, cannot be gainsaid. In this striking window, a simple, attractive design or picture has been made, and the full force of a few strong pieces combined in repetition is brought to bear on the passer-by, who must be blind, indeed,—blinder than those that will not see—if he doesn't see the message.

We thank Mr. B. Garfunkel for this fine window.



Dixon Pencils in France

L. G. SLOAN, Ltd., European representatives of Dixon Pencils, have in their General Agent for France, Mr. Jules Fagard, of Paris, a very aggressive master of merchandising; and it goes without saying that he is a firm believer in good advertising, well and sufficiently administered.

One of Mr. Fagard's light automobile delivery trucks is shown at the head of this column. It is the very best proof in the world that Dixon's ELDORADO, "the master drawing pencil," is making abroad the same success for its distributors as in the U. S. A.

Our contact with Mr. Fagard has inspired us with respect and admiration and the orders which we receive "for France" tell us better than words that in his capable hands the Dixon Line is getting the attention its quality and variety deserve.

When Mr. Fagard was in this country a few years ago with associates in the L. G. Sloan organization, we had the group photographed. We reproduce Mr. Fagard's photo from this group.

Some not distant day we hope to shake hands with him again in the U. S. A.—and, perhaps, get another and better photo.



MR. JULES FAGARD

Short Sermons for Salesmen:
Indifference to Weather

DIXON men encircle the globe. They brave all the elements and undergo much hardship as well as enjoy considerable luxury in traveling. Collectively, they do not miss any weather. Individually, they contend with extremes of heat and cold, wetness and drought, mud and dust.

Billy Allen gets it forty below in Minnesota; and Billy Lewis gets it almost a hundred and forty above in Alabama—and it's all in the day's work. Lloyd Wagner raises a thirst skirting Death Valley, and Ray Lohse paddles out of a cloudburst in Arkansas—and their orders reach the factory every day.

A good outside salesman must be a "child of nature." He must meet nature in all its moods as he meets people in their variable moods. He must find his way and hold his own, and only retreat when discretion is the better part of valor, as did the great Washington when he returned from White Plains with the calm statement that "Ye lady was not in ye mood." Washington's retreat was only temporary because Martha Custis later decided to be Martha Washington!

Actually there are few days in the year when Nature's moods need interfere with the well-equipped and well-poised salesman. Weather is, as ever, the universal topic of conversation. It now has a rival topic in America which may be grouped with it parodying the quotation from "The Ancient Mariner"—"Weather, weather everywhere and 'Not a drop to drink'."

Even buyers may talk more about weather than about merchandise. "Everybody talks about weather, but nobody ever does anything about it."

The salesman must guard himself about drifting into a depressing attitude about weather which leads into a depressing mood about business conditions and definitely discourages his prospect from favorable action on the spot. Sales are made by enthusiasm and a pessimistic turn of talk about the weather kills enthusiasm.

A salesman's effective working time is short. If he hangs around the hotel to keep out of the hot sun—or more often because it is rainy out—he misses many a golden opportunity. The man who ventures out on the stormy days gets the thrill of the little struggle with the elements. In our Northern winters, he finds real exhilaration in facing the driving snow-storm! The buyers, not so venturesome, are not likely to pick these days for their outside excursions, so they can be found where they belong. All comfortable and contented inside, the salesman who enters with good cheer and with no complaint about the weather is likely to meet a friendly reception. Here is his best chance for a complete interview to bring about a permanent understanding with the buyer.

To sum it up, the salesman should not be appalled or depressed by a condition which, if met cheerfully and boldly, helps to accomplishment and strengthening of character.



The Dixonman's Hotel Sample Room Display

IN a city here and there a hotel clerk has looked up in surprise when his good friend, the Dixon salesman, asked for a sample room.

The hotel clerk thought that the vest pocket was all the sample room a lead pencil needed and was amazed to hear that the Dixon man not only wanted a sample room, but the largest and best lighted in the house. The reason for this has been developing for two or three years. Since the war-time restrictions have been removed, the Dixon Line has been blossoming forth even as the wild flowers of the field, or more properly, the flowers of a well-planned garden.

People buy mainly things that they see; and pencils, like all other merchandise, must be displayed to be sold. While there may be a strong demand

for one or several pencils, this demand is mainly silent. It consists of looking for, rather than asking for, the article desired. Dixon has developed quite a number of appealing counter stands for the high grade store which display a considerable variety of pencils in very small space, featuring ELDORADO pencils in all degrees, shapes and sizes, colored pencils, lumber crayons and carpenter pencils and most recently, various hardness of thin leads for popular mechanical pencils. Also there are many sorts of stands, easels and displays that are wanted by general stores and small stores who carry a few lead pencils as an incidental feature. These are bought through the wholesalers, and the wholesalers want for this trade

(Continued on page 107)



*Display of Dixon's Lubricants at Booth of W. H. Brady & Co.,
at Culcutta Motor Show*

**Pioneer Brass Works
Indianapolis, Ind.**

July 5, 1923.

JOSEPH DIXON CRUCIBLE CO.,
Jersey City, N. J.

Gentlemen:

We heartily recommend Dixon Crucible as being one of the most economical, safest and practical crucibles used in the many years' experience of the Pioneer Brass Works.

One interesting feature is thin uniform scaling, that leaves a uniform thickness of crucible which retains strength until the very last.

Another important feature is in the construction of the bilge that prevents a possible crush or slip of crucible through tongs while being removed from pit furnaces.

Our record for the greatest number of brass heats for one crucible is 62. The average is 30 brass heats on the No. 70 size. In comparing this average with experiences on some other crucibles, we consider this very good.

Very truly yours,
PIONEER BRASS WORKS,
(Signed) **WILLIAM HENSLEY,**
Foundry Supt.

When gear-box lubrication is figured on a cost-per-mile or cost-per-ton basis, *then* you will find

DIXON'S 677

most economical.

It cuts down power-loss in the gear-boxes and makes gears operate easily, quietly, and deliver full engine power at lowest cost.

WRITE FOR BOOKLET NO. 190G

JOSEPH DIXON CRUCIBLE CO.

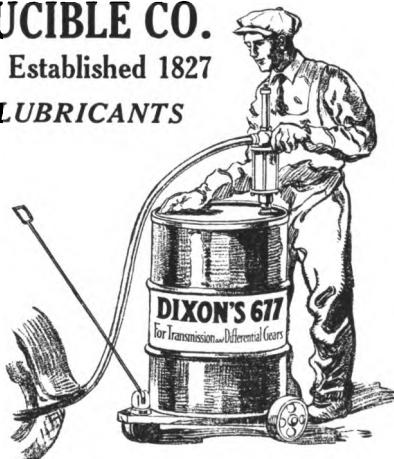
Jersey City, N. J.  Established 1827

MAKERS OF QUALITY LUBRICANTS

*For Spur and Bevel Gears
Use Dixon's Gear Lubricant
No. 677*

*For Worm Drives Use Dixon's
Gear Oil No. 675*

*For Universal Joints Use
Dixon's Grease No. 672*



Graphite

PUBLISHED BI-MONTHLY BY THE
JOSEPH DIXON CRUCIBLE CO.

AT JERSEY CITY, NEW JERSEY, U. S. A.

In the interests of Dixon's Graphite Productions, including Crucibles, Lubricants, Pencils, Paint, etc. Sent free upon request

Vol. XXV SEPT.-OCT., 1923 No. 5

Out of the Earthquake—Safe!

OUR Pencil Department's representative in the Far East was in Yokohama during the great 'quake. But he and his wife escaped with their lives. Read extracts from his first letters, which follow:

Sept. 10th, 1923

JOSEPH DIXON CRUCIBLE CO.,
Jersey City, New Jersey

Have just arrived in Kobe from Yokohama on board the American gunboat Hulbert.

I have lost all my samples, papers and clothes, also letters of credit. The quake knocked the Hotel Oriental Palace down in about three minutes and fire and tidal wave finished the rest.

I was on the pier seeing a friend on the Australia and the whole pier was badly knocked about. I went head first into the water on to a small sampan. In a few minutes I walked along the pier and climbed on to the French boat Andre Liban. There were three boats and the typhoon and wave knocked them all together. So I jumped from one to another and got on to the Australia as the best bet as the whole place was on fire and oil was burning on the water, and small boats and junks were burning all around us, and as the wind was off shore we had some close shaves. We could not move as our propeller was fouled with the anchor chain of the Steel Traveler which was jammed in our stern.

I am indeed glad to be able to again write to you as I said several prayers during the fire that lasted from Saturday noon until the following Thursday.

To take my mind off everything I set to work with the Doctor on the Australia and we handled some 600 to 1,000 bad cases. Am a bit the worse for wear and am dressed at the moment in the Purser's shirt, Second Steward's shoes, and old pair of white pants that are now black, and no coat. Every bit of my clothes, samples, etc., have gone.

Please type part of this and send to other firms. My nerves are not good enough to go over this again for a few days.

It is now 3:15 P. M. and I leave tomorrow at 10:00 A. M. Must hurry as I must go to the Relief Committee and get me some clothes.

Have tried to send several cables and hope that you receive one of them.

Sincerely yours,
H. EADIE

Shanghai, Sept. 18th, 1923.

MESSRS. JOSEPH DIXON CRUCIBLE CO.,
Jersey City, New Jersey.

Dear Sirs:—I beg to thank you for the \$1,000.00 sent by your good selves and Messrs. Boorum & Pease. Same was badly needed as I arrived here with the very dirty trousers and shirt I had in Yokohama. Have lost everything—trunks, samples, clothes and \$400.00 in money, and letters of credit; was lucky to save myself. I was writing on Saturday morning and left the Oriental Palace Hotel to send mail to you per the Empress of Australia so was on the pier. Several people lost their lives there. The water looked good to me so bad a swim for a while; then got back on what was left of the pier and walked along to the S.S. Andre Lebon. At 3:30 Sunday got off and climbed on to the Empress of Australia. The fire was bad and lighters and junks were burning all around and we had no water.

The nice orders sent you from Tokyo will have to be cancelled at least for the present; this trip certainly has been the limit, but I am sincerely thankful that I got out with a bad shake and nerves a bit jumbled.

The American Fleet did wonderful work and as I was about the last to leave Yokohama the U. S. S. Hulbert gave me a lift to Kobe and from this point Witkowsky paid my fare to Shanghai on the P. & O. Dongola.

Am not feeling any too clever and really want to get away from this part of the world at least for the present and so with kindest personal regards, beg to remain,

Sincerely yours,
H. EADIE

These offhanded letters, written under stress and strain, tell us nothing of Mr. Eadie's "conduct under fire," and so we quote a letter from the acting chief of the American Relief Committee:

AMERICAN TRADING COMPANY

Tokyo

September 11, 1923.

MESSRS. JOSEPH DIXON CRUCIBLE CO.,
Jersey City, U. S. A.

Re Mr. Harold Eadie

Gentlemen:—The above gentleman was a survivor in the Japanese earthquake of September 1st, and distinguished himself in heroic work amongst refugees aboard Empress of Australia which acted as a hospital ship for about a week. He requested me, as Acting Chief of the American Relief Committee, to notify you that he is safe and will resume his work in Company matters in perhaps a week, during which time he will continue his work in connection with the American and British Relief Committees.

He also asked that you notify his other firms whose names, I understand, are well known to you.

Very respectfully yours,

JOHN K. I. CODY,
General Manager,
National Cash Register Dept.

JKIC/SF
AIL-L

We are gladder than we can tell that Mr. Eadie and his wife came through safely. And even gladder to know that he bore himself so manfully at that stricken time.

Pencil Week—1923

THE third Pencil Week of the Stationers of America, having come and gone, deserves consideration and comment.

It was a happy thought—whose we do not know—that gave us Pencil Week.

Of course, every week is a pencil week, as we all know; pencils are being made, used and sold everywhere in the civilized world at every moment of the day and night.

Just the same this very diffusion made it difficult to concentrate attention on pencils; what is universal is disregarded; sunlight, for example.

But the lack of it for an instant only . . . !

Well, someone thought of having Pencil Week at the time every family is thinking of trying pencils—the week before the opening of School in the Fall.

If ever there was an appropriate occasion for such an enterprise, surely this is it.

And now Pencil Week is fast becoming one of the country's commercial institutions.

Certainly, if the evidence of our own eyes can be believed, supported by reports of our representatives in all parts of the U. S. A., Pencil Week 1923 was a great effort which stationers and manufacturers of lead pencils should be happy over.

A number of photos of Pencil Week windows have come to us. Some of these are reproduced in this issue of GRAPHITE (see center spread).

It will be noted that the feature of these windows is the Ti-Con-Der-Oga cut-out.

This cut-out is called "the hit of Pencil Week."

Every business man that attended

school in this country has heard of Ti-Con-Der-Oga, "the fort of terrible celebrity" in the annals of the United States.

A celebrated American artist, Mr. Fred C. Yohn, was engaged to make the drawings for this Pencil Week cut-out. Mr. Earl Hortex made a lead pencil drawing of the fort as it stood in 1776, from Mr. A. C. Bossom's restoration drawing.

To make a long story short, these fine artists produced work so colorful, attractive and striking that remarkable results were seen from the first.

Unusual testimony of the effectiveness of this piece has come to us.

All of which makes us feel that we have done our share to help the stationers of the country put across another successful Pencil Week.

The Dixonman's Hotel Sample Room Display

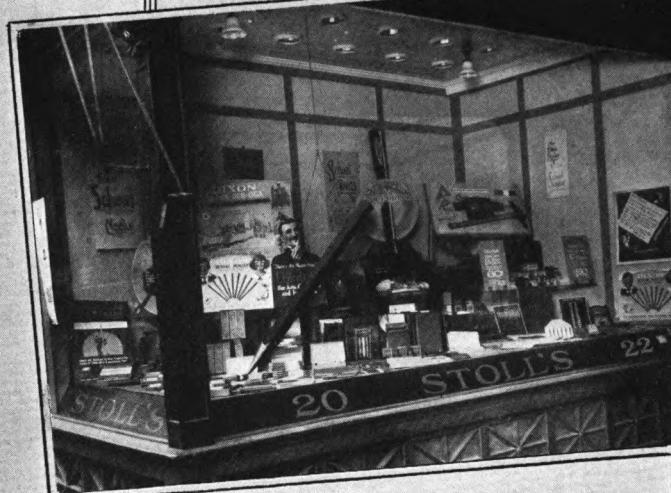
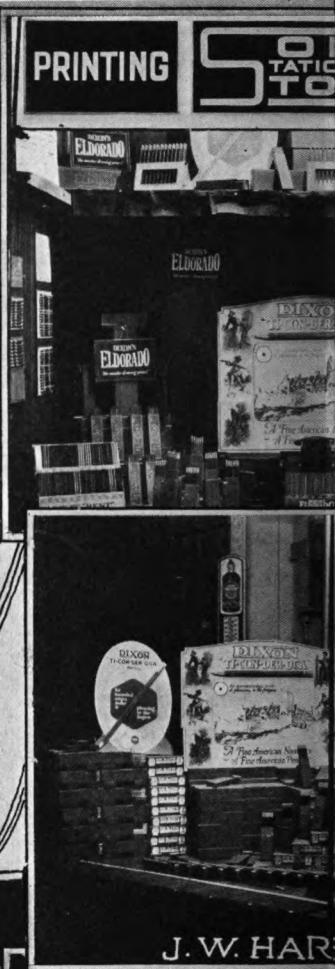
(Continued from page 108)

good merchandise in appealing put-ups. To show all these just as they are in the complete packages and displays, the Dixon men have invited their customers in the largest cities to see this hotel display. The merchants invariably have expressed surprise that the Dixon line is so comprehensive and they have picked out many things that previously had passed without notice in the sample roll and catalog.

The above photograph shows one of the farthest West hotel displays, that opened recently by Mr. Lloyd A. Wagner at the Palace Hotel in San Francisco. Mr. Wagner reports that his customers found it well worth while to visit this exhibit, and the same opportunity will be offered this coming year in other parts of the country.

PRINTING

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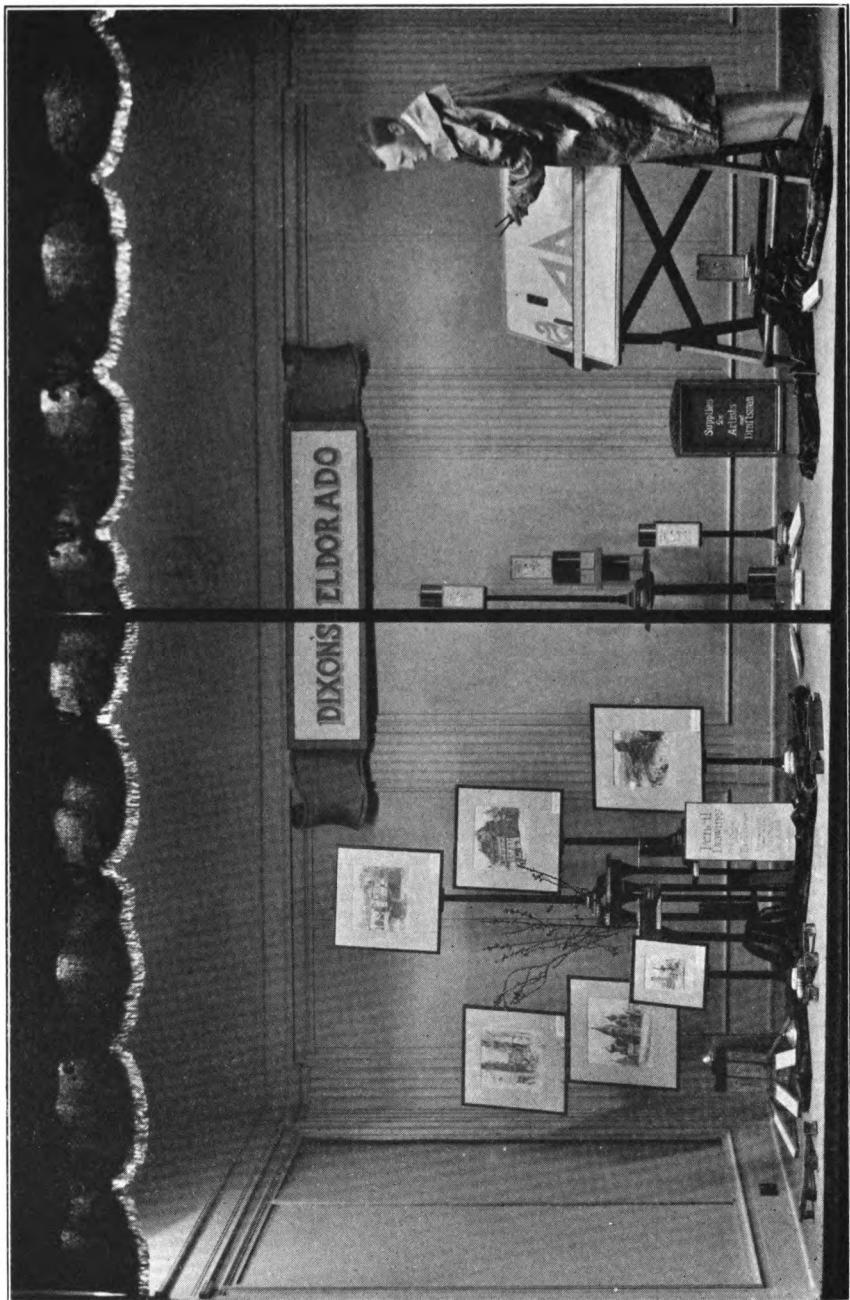
SOME DIXON WINDOWS DU

D
C
O
R
Y
S

ENGRAVING



SEE PAGE 107



Window of J. K. Gill Co., Portland, Oregon

Guide Post



THE melancholy days are here!
Who says so?
Not I.

What if the Last Rose of Summer has blown?

When Roses go out, Chrysanthemums come in.

And a fair exchange is nothing at all to be mournful about.

If you are a dealer reading this: read on.

You will, perhaps, read a suggestion you can profit by in decorating your windows these days.

Have you looked at the windows reproduced in this issue?

Do so, by all means.

And then send to us for such display material as you need to brighten up your store and windows.

A Window Display with an Idea

THE J. K. Gill Co. window reminds us of a fine old bit of poetry, many of our readers may be familiar with:

*"The brow may run with sweat,
The muscles heave,—and yet
The goal ahead to win
There's something needed from within!"*

And that something is the idea!

And that something distinguishes this window.

It is simple, it is well-balanced, it is interesting: and more.

It shows a plan,—it demonstrates the connecting link between the doer and the thing done, and the tool used.

It's a prize-window!



On Time

TO be on time always is to be ahead of time now and then.

This means simply that the punctual man or woman often gets there a little bit before the minute.

This is the kind of minute-man we take off our hats to.

Not the one who is packed up and ready to leave on the minute—but the one who arrives before the minute to begin.

One would think, observing some people, that they made up for coming in late by leaving early!

One of the marks of interest is eagerness. The man who is eager to start will not be denied in the race. He has the will to win it.

Great business organizations are built of such men and women.

They are alive!

They are going Somewhere,—and they know where that Somewhere is, and what it means to get there.

The unpunctual man or woman is a man or woman that has never grown up.

What in the schoolboy or schoolgirl has been punished for ages has no excuse whatever in a business man or woman.

There is no such thing as an habitually late Business-man.

For business depends on punctuality; in getting off, in getting on, in getting there: ON TIME.

DIXON LUMBER CRAYONS

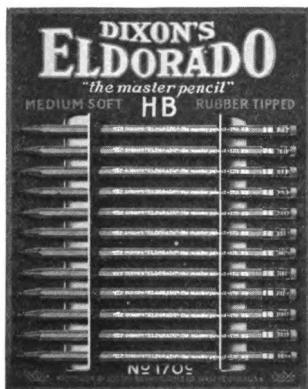
are of that quality which makes an article most useful when others are almost useless

SAMPLES
ON
REQUEST

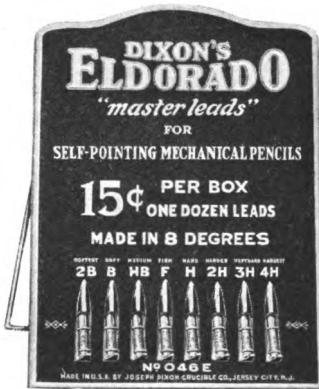


MADE IN U.S.A. BY
JOSEPH DIXON CRUCIBLE CO.
JERSEY CITY, N.J.

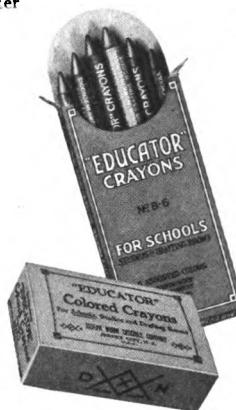
New Dixon Pencil Numbers



No. 170-C—Display Card containing 1 dozen rubber tipped HB degree "Eldorado"—"the master pencil," 6 cards to carton.



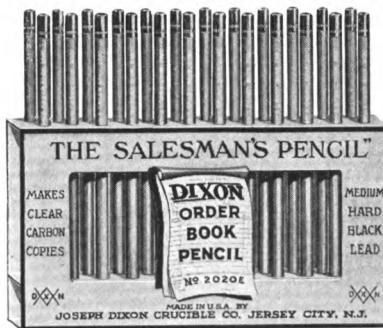
No. 046-E—Automatic Feed Metal Display Easel for "Eldorado" Self Pointed Leads No. 046, with 1 gross boxes leads, assorted degrees.



No. B-6—"Educator" Wax Crayon Assortment, 6 assorted colors to box.



No. 1093—Eraser Assortment, 1 dozen in display box, 6 boxes to carton.



No. 2020-E—Display Easel for Dixon's No. 2020 "Order Book" Pencil—the salesman's pencil; 2 dozen in display easel, 3 easels to carton.



**DIXON'S
ELDORADO**
"the master drawing pencil"

Dixon's Eldorado is impervious to weather conditions. As one prominent engineer puts it:

"We have used Eldorado pencils in hot, moist weather, upon very thin tracing paper. This is a severe test and we are glad to say they are satisfactory. The grades are uniform, lead smooth and free from grit and of good black texture. Furthermore, the blue-prints made from these pencil drawings are bright and clear."

That is praise, indeed. It is just another reason why Dixon's Eldorado is used by more engineers and draftsmen than any other pencil.

JOSEPH DIXON CRUCIBLE COMPANY
Pencil Dept. 190-J Jersey City, N. J.

SAMPLE OFFER
Write for full-length free samples of "*The master drawing pencil*" and of Dixon's "BEST" Colored Pencils. In their field, the "BEST" Colored Pencils hold the same position of supremacy as Dixon's Eldorado.

**DIXON'S
ELDORADO ERASER**
A worthy partner of Dixon's Eldorado pencil. Soft—pliable—yet firm enough to clean the drawing without crumbling into aggravating little bits. Made in 12 sizes. Write for a sample. Free on request.

The Difference Between Ferrous and Non-Ferrous Metals and the Care of Crucibles in Brass Foundry Practice

(Continued from July-August)

The melting points of the different metals and their tendency to oxidation must be kept constantly in mind to the end that the losses will be as low as possible. Dr. Gillett has furnished a list of one hundred seven foundries producing low zinc mixtures in which the gross losses run from 1.3 to 10% and thirty-five producing high zinc mixtures showing losses of from 2.4 to 15%.

It would seem from these figures that much could be done in some of the foundries making these reports.

It is quite possible that some have slow working furnaces, charge the metals in the wrong sequence, fail to use sufficient flux, or that careless furnace men spill the metal. This is a subject upon which each founder must dig in for himself and correct any bad practice.

There are many fluxes on the market, some to do one thing or another but most of them to remove foreign substances, make clean running metal and sound castings.

We have tried many, with, on the whole, rather indifferent results. Our last experiment was with one supposed to remove free iron up to 4%.

Two heats of turnings iron free, to which 4% of Iron turnings were added, gave the following results:

Heat run with charcoal flux analyzed, Fe 1.62%.

Heat run with purchased flux analyzed, Fe 1.72%.

We wrote for further instructions on the use of this flux about a month ago, but have received as yet no reply which is of any value to us.

Very little difficulty is experienced in producing cores and moulds in the brass foundry, providing the patterns are workable.

Right here I want to state that no man is fit to design a casting till he has served six or eight years under special instruction as a core-maker, moulder and pattern maker.

The things which are sent to most foundries in the name of patterns and from which moulds and castings are to

be made, are responsible for much proflanity and many gray hairs.

In the matter of gating and pouring, however, much judgment and skill is required. Moulders with long experience in brass often go wrong, but when an iron moulder takes a job in a brass foundry, real trouble starts.

The causes for this are found in certain differences between iron and brass.

In the matter of specific heat, non-ferrous metals are much lower than cast iron, while in thermal conductivity the reverse is the case. In short, the non-ferrous metals when poured, have less heat to give off and give it off quicker.

Due to the relatively strong tendency of the non-ferrous alloys to oxidize and occlude gases, they must never be heated to temperatures greater than is necessary to produce good castings.

These conditions place the Brass Founder between the devil and the deep sea. To overcome them, he must give special attention to both gating and pouring.

When pouring, the crucible must be in exactly the right position and the stream of metal must be large enough to keep the sprue full. The pouring must be done without interruption till the mould is full, or the castings will be bad.

I happened to be in an Iron Foundry the other day when they were pouring off. One of the flasks had a run-out and the pouring was stopped till the run-out was fixed, when the pouring was finished.

I remarked that it was hard luck, but the Manager smiled and said the casting would be all right. Through curiosity I called him up later and was assured the casting was good, the Manager remarking that it had a thick section.

As a matter of fact the casting was eight feet long, cored out the entire length and the walls were three-quarters of an inch thick. Had these conditions existed in a Brass Foundry, the casting Mould, in all probability, would have been bad.

That the differences between the gating for Ferrous and Non-ferrous Castings may be readily observed, I had a side of the same patterns made in both metals and present them for your inspection.

With the Iron Castings the gates are flat and wide, the metal running directly from the sprue with no attempt made to exclude dirt or oxide, the mould being cast flat.

The Brass Castings present quite a different appearance. You will note that the runner is of distinctive design, that the gates leading to the castings are cut at an acute angle to it and pointing in a direction opposite to the flow of the metal.

You will also observe that the gates are deep in proportion to their width, that they are filled at the castings and that they take off above the bottom and below the top of the runner.

The mould is raised at the sprue end and the metal poured as rapidly as possible till the sprue is full, the pouring speed for the balance of the metal being sufficient to keep it full.

The metal flows down the bottom of the runner filling it quickly and pouring the castings at the lowest level first and the others in turn as a constant supply of metal is available.

Any dirt or oxide in the metal has a tendency to rise to the top of the runner and as the gates to the castings take the metal from below the top of the runner, reasonably clean castings may be expected.

For some reason consumers seem to be particular about the appearance of Non-ferrous Castings and every precaution must be taken to make them true to the patterns.

The cleaning of Brass Castings is, due to the toughness and tendency of the metal to clog emery wheels, more difficult than Cast Iron.

The recovery of the metal in brass spillings, skimmings and ashes is a matter of considerable importance. There are several kinds of equipment on the market for this purpose which are supposed to do this in the individual foundry.

Most of these which I have examined recover the large pieces but the material discarded by them runs from two to sometimes as high as seven per cent. metal and this is thrown away.

The metal recovered represents all the mixtures run in the foundry and as a result it can be rerun only in low grade product.

In closing I may say that had I known as much about Non-ferrous Castings thirty years ago as I do today, I would have endeavored to get into a less troublesome business."

Standardization of Scientific Symbols

A RECENT conference held in New York City under the auspices of the American Engineering Standards Committee revealed a sentiment among engineers, scientists, government officials, business paper editors and industrial executives in favor of the unification of technical and scientific abbreviations and symbols.

It was agreed that the standardization of abbreviations and symbols would result in decided mental economies. The present situation with respect to the use of abbreviations and symbols in engineering, scientific and other technical fields is comparable to a language which has degenerated into a multiplicity of dialects, each of which has to be translated for the users of the others. Abbreviations and symbols constitute an ever-growing and important part of the language of engineers, scientists, industrial editors and other technical men. The use of one symbol or abbreviation for several different terms and the use of several different symbols or abbreviations for one meaning are, however, at present causing a great deal of confusion, misunderstanding and often serious errors.

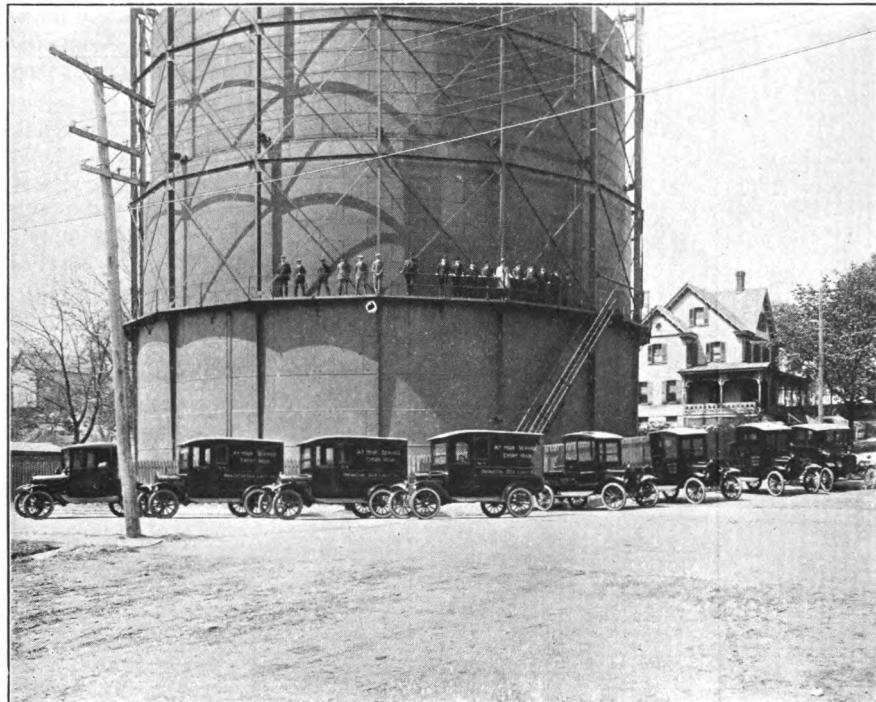
—*Chemical and Metallurgical Engineering.*



An Explanation

In the last issue of GRAPHITE mention was made of our crucible representative, Ralph R. Belleville, and his little daughter, Betty.

In the preparation of this article, it was not made entirely clear that Mr. Belleville adopted his little daughter. With this thought in mind a second reading of the article will make our intention more clear.



The Bridgeton Gas Light Company

Bridgeton, N. J.

THE above photograph shows one of the gas holders and eight of the service cars of this progressive gas company.

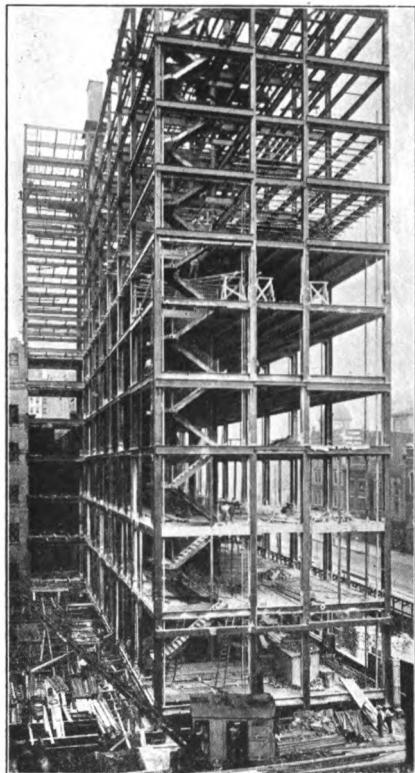
This holder, as well as the others, are all painted with Dixon's Silica-Graphite Paint. The other holders were illustrated in the September-October, 1921, issue of GRAPHITE.

This particular gas company is conducted in the most up-to-date manner, and has the fullest co-operation of its customers which is not always the case these days.

We are greatly pleased to quote a part of letter received from Mr. Jacob B. Jones, Superintendent:

"Our Company has always laid very great stress on the SERVICE which we give to our Consumers—for that very reason we use Dixon's Silica-Graphite Paint as we know from experience that it is always your policy to sell a paint to your Customers that will give SERVICE."

Letters like this are appreciated and we try to live up to our reputation in every possible manner.



Life Insurance Company Richmond, Va.

THAT the South is quickly acquiring the spirit of progressiveness is demonstrated by the number of new buildings, etc., that have been erected in the last few years, below the Mason and Dixon line.

Richmond, Virginia, is not to be outdone by any other city as the illustration shows. It is the new building of the Life Insurance Company and is the third new structure shown in GRAPHITE recently. The first, State Office Building, appeared in a previous issue, and the second, National Theatre, appears in this issue.

Clinton & Russell are the architects, American Bridge Company, steel fabricators, and John T. Wilson Co., general contractors.

The steel tonnage is about 1,200 tons and every bit of it is protected with Dixon's Silica-Graphite Paint. Richmond seems to be thoroughly Dixonized and we feel highly complimented that our paint has been their choice so many times. Quality tells.



A Correction

THE July-August issue of GRAPHITE contained an article regarding the construction of the State Office Building, Richmond, Virginia.

In this article it was stated that the steel contractors for this building were the Richmond Structural Steel Company. We are advised, however, by this concern that the steel contractor, as well as the contractor for the erection of the steel, was the Lehigh Structural Steel Company and that they should have full credit for the splendid piece of work done on the building.

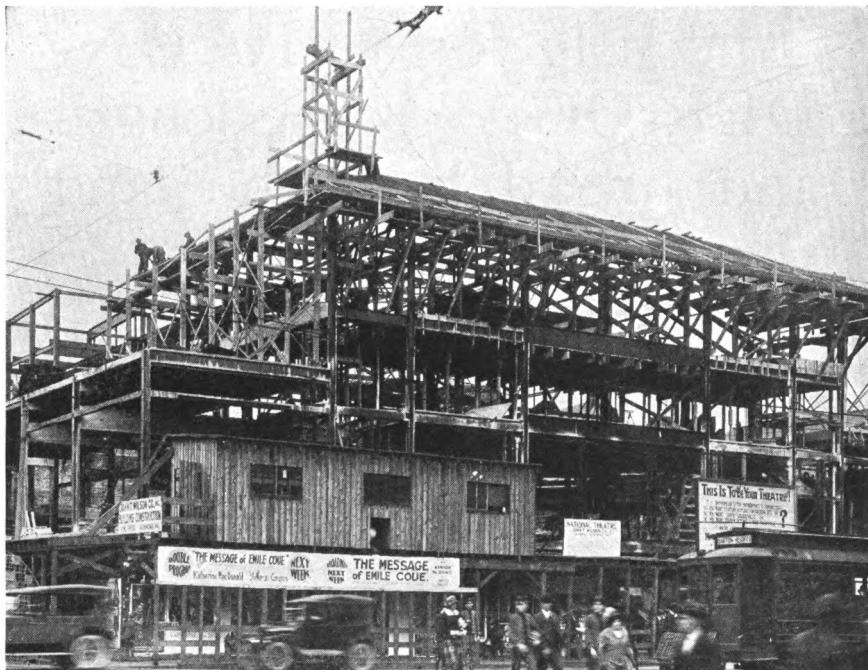
The Richmond Structural Steel Company has, however, the contract for the furnishing and erecting of all the ornamental iron, including stairways, elevator inclosures, etc.

We humbly apologize for our error and regret that it occurred.



LIQUID, ALL RIGHT.—The Mississippi banker asked a man who was trying to borrow money: "How much have you in the way of immediate liquid assets?"

To which the customer cautiously replied: "About a case and a half."—*Southern Lawyer and Banker*.



National Theatre Richmond, Va.

THE illustration above shows a view of the steel work of the new National Theatre, Richmond, Va. The owners advise that no expense will be spared to make this the finest theatre in the South.

The architect for this building is Mr. C. K. Howard; the general contractors, John T. Wilson Co., and the steel contractors, Richmond Structural Steel Co.

There is approximately 400 tons of steel in the building and all of it is protected with Dixon's Silica-Graphite Paint.

The use of Dixon's Paint on this steel work is still another instance of where quality counts. After the steel work is covered there will be no opportunity of repainting and nec-

essarily a paint must be used which has a reputation for long service and long life. It would have been cheaper to specify a lower priced paint but then there would have been no guarantee as to how long it would last.

Other contractors and architects will do well to follow the footsteps of others in their line and use and specify Dixon's Silica-Graphite Paint. It has a reputation for quality, long life and economy.

YES, BUT DON'T BANK ON IT.—
Efficiency is the art of spending nine-tenths of your time making out reports that somebody thinks he is going to read but never does.—*Kansas Industrialist.*

The field for "TI-CON-
DER-OGA" is the length
and breadth of the land
that gave its name.



Reproduction of new "TICONDEROGA" cutout

Made in U. S. A.

by the

JOSEPH DIXON CRUCIBLE COMPANY
Jersey City, N. J.

Graphite

NOVEMBER-DECEMBER, 1923

VOL. XXV

NO. 6



Merry Christmas

JOSEPH DIXON CRUCIBLE CO.

ESTABLISHED
1827

JERSEY CITY, N.J., U.S.A. INCORPORATED

1868



*Miners, Importers and Manufacturers of
Graphite, Plumbago, Black Lead*



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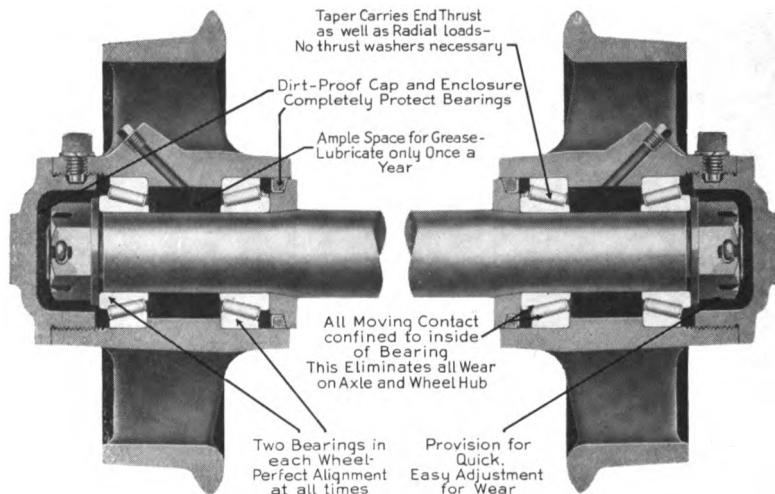
Volume XXV

NOVEMBER-DECEMBER, 1923

Number 6

A° Dⁱ 1

Startled!—and	And left them
Out of the deep of night,	Blankly staring,
Voices . . .	Affrighted.
Overhead,	And the Star
On the wind,—	Shed its light
Voices . . .	On their upturned
Choirs singing	Shining eyes . . .
At midnight . . .	And a radiance
Unearthly music . . .	Lighted them
Rejoicings . . .	As from within . . .
Then, tones	And so they
Of command:	Followed the Star . . .
“Follow the Star” . . .	Nameless witnesses of wonders!



Timken Bearings in Mine Cars

IN the selection of anti-friction bearings for mine cars, there are several essential factors to be considered. Most important are those of economical lubrication, power conservation, minimized friction, adjustability for wear and the ability to carry thrust loads and all combinations of loads within the bearing itself.

It is an indisputable fact, when two moving parts of a mine car truck are in contact, wear must sooner or later occur. The best design of mine car trucks has a minimum of moving parts, and the inevitable wear is limited to those parts only. In the Timken Bearing equipped truck, quality is concentrated in those parts so that wear even there is postponed as long as possible. A good example of this principle is the total elimination of all wear on axles and wheel hubs resulting from the use of Timken Tapered Roller Bearings in mine cars.

The Timken Bearing consists of a

series of tapered rollers revolving between two tapered raceways, the cone and the cup. The outer raceway, or cup, is pressed into the wheel hubs and in reality becomes a part of the wheel. The inner raceway, or cone, is mounted on the axle spindle and in reality becomes a part of the axle. Thus all wear is confined to the bearing—for the only moving contact is in the bearing itself. The axles and wheel hubs are completely protected from wear. And that is how Timken Tapered Roller Bearings completely eliminate all wear in mine car truck parts.

The tapered construction of Timken Roller Bearings permits a quick, easy adjustment when wear does eventually occur. Thus after long and continued service, the bearings will function as new, and there is no need of expensive, time-wasting replacement. The tapered roller bearing is the only type of anti-friction bearing which can be satisfactorily adjusted after the wear has occurred.

Another distinct advantage of this

tapered design is the elimination of thrust washers. The cost of the washers and the labor cost of replacing them, are an expense which is permanently removed in the mine cars that are equipped with Timken Tapered Roller Bearings.

The rapidly increasing use of Timken Tapered Roller Bearings in mine cars may be attributed largely to their ability for carrying thrust loads simultaneously with radial loads. Radial load is the load perpendicular to the axle—load up and down. Thrust load consists of load horizontal to the axle—load coming from the side or end. This latter is especially acute in mine cars. Most loads are a combination of these two forces and merge into combination or resultant loads. To operate efficiently in mine cars, an anti-friction bearing must carry all these loads with a margin of safety.

The cost of lubrication is still another item which is reduced to a minimum through the installation of Timken Bearings. For a mine car equipped with these bearings, because of the large, non-leakable bearing enclosures, requires lubricating only once a year—from 6 to 10 pounds of grease every twelve months—provided that the grease employed is such as to perform during this period without break-down, gumming, or hardening. Compare this with your present lubricating cost—the labor of greasing or oiling every two or three months or more, and the cost of the lubricant used in these numerous applications.

From whatever angle any type of load comes into the Timken Bearing, it is distributed evenly along the entire length of the tapered rollers. There are no thrust washers to increase the friction resulting from thrust loads. The bearings carry

all loads along the entire length of the revolving tapered rollers, reducing to a minimum the friction resulting from all combination loads. The result is a marked saving in power consumption.

In addition, there is the human element to consider. The man who is working in the seam, that is inaccessible to a locomotive or a mule, can "shoulder" a Timken-equipped car easily and quickly, even though loaded to capacity.

Timken Bearings, while saving dollars by cutting expenses in numerous ways, decrease the task and increase the good will of the man with the pick and shovel. They take the "pushage" bugbear out of the haulage system and preserve the energy of the men for the digging and loading of coal.



TRAVERSE CITY, MICH.,
Sept. 6, 1923.

JOSEPH DIXON CRUCIBLE CO.,
Jersey City, N. J.

Gentlemen: I have been receiving your publication "GRAPHITE" for a long time. I find it very interesting and wish to thank you for sending it to me.

I infer, from your card, that only officers of some company or firm should receive "GRAPHITE."

Well, I am only a locomotive engineer, and while I have always been interested in it, I cannot ask that you continue to send it if not consistent with your policy.

In my time, I have had many poor running journals. The first and best medicine was Dixon's Products, generally Flake Graphite. It has helped wonderfully to bring my trains in on time or at least with only a small delay, when without it a connection would have been missed many times.

A small can of Dixon's Flake Graphite on the engine has many times saved me considerable worry. I have tried many things for hot journals and poor running pins, etc., and never had much success with anything but "Dixon's."

If you find it consistent, I would be pleased to continue receiving "GRAPHITE."

Very truly yours, W. H. KEARNEY.



THE Guide Post is a land animal—for the most part.

There are, to be sure, species of guide posts on the sea—videlicet, bell-buoys, and such like. Warnings they are to the mariner. "Sailor, take care!"

And then the stars in their courses are a guide to those that know them.

The trackless firmament is really not trackless to one who knows.

And now we are writing about what is really uppermost in our minds, these days of December.

What a gay dog is December!

He cometh last and bringeth most.

He bids us all be merry—in every clime.

What would the sad world be without December?

Well, we were speaking of heavenly guide posts: stars, constellations, galaxies: and we thought of the Star that shines on the top of a Tree.

You can buy this Star at Woolworth's; and the Tree at the next corner or so.

Having made your purchases, you hide both the Star and the Tree.

And then along about midnight on a certain Eve, when all the house is quiet, you take them out, the Star and the Tree.

And with great care and love you set about their arrangement—and the arrangement of sundry and divers glittering ornaments on the Tree.

And if you are wise, you will leave the Star until the last—as a sort of satisfaction to yourself, as who should say, "Now, it is finished," as you place the Star atop the Tree, which blazeth like the Burning Bush.

Now, this Star that you place swung into our earthly vision some nineteen hundred years ago. Is this not Anno Domini 1923?

Verily: and now having placed the Star, have you not set up your Christmas Guide Post? Yes, you have: may it point out to you and yours a Merry Christmas!



Little Sermons to Salesmen

THE best article we have read recently about selling, as applied to the stationery business, is a resumé of the talk given by Mr. E. F. Swan, President of the National Grocers' Service, Inc., New York City, before the Boston Stationers' Association.

Mr. Swan gives the viewpoint of a keen merchandiser from another field coming into contact with the stationery business as a retail buyer. The Boston Stationers have invited a number of business men from other fields to their meetings this year so that they could, perhaps, see their business as others see it and thereby gain the broadest possible outlook on their problems. They were much impressed by Mr. Swan's address, some extracts of which follow:

"I have no panacea for the conditions I will talk about—I cannot outline a plan whereby every stationer can double his income over night. But I hope to give you something to think about, something that if tried will make possible for you more efficient sales work and increased possibilities. . . .

"Successful salesmen (manufacturers and wholesale) today show that their success is largely due to their detailed knowledge of what they have to sell and careful study of the needs of their customers. . . .

"It is very interesting to step into a store and watch clerks. There is the real weak link. A man goes into business primarily for the purpose of selling goods. He has some confidence in his own ability to sell goods, and as a rule he exercises it with success. It is when he turns over part of the selling to his clerks that his sales problems become acute.

"I stepped into a prominent stationery store in one of the large cities in this country and asked the clerk for five hundred loose leaf sheets, describing the size and kind. Noting the lack of attention on the part of the clerk to the possibility of other sales, and feeling in good humor, I said with a smile, 'What do you think I am going to do with those loose sheets?'

"The clerk, also, with a smile, said, 'I don't know.'

"Then I asked, 'How do you suppose I am going to carry them about?'

"Clerk: 'I suppose you will put them in a binder.'

"Then I said, 'Do you suppose I have those binders and have you binders for sale?'

"Clerk: 'I don't know whether you have binders or not. Yes, we have them for sale.'

"Then I said, 'Why not offer them to me?' And I bought two binders.

"The situation now becoming interesting, I decided to carry it a little farther by asking the clerk, 'What am I going to use the sheets for?'

"Answer, a blank stare. I said, 'Does it occur to you that I may want to write on the sheets?'

"Clerk, brightening, said, 'Oh, yes.'

"Then I said, 'What with?'

"Here was an opportunity to sell a customer not only what he called for, but three or four very necessary articles which could all be used in conjunction with the specific demand for loose leaf sheets.

"This situation is not over-drawn by any means, but obtains in prac-

(Continued on page 142)



A Beautiful Window

JOSEPH CONRAD, in "The Rescue," observes that "the power of beauty is part of the naked truth of things."

We all bow to beauty, even though we refuse to acknowledge it.

There is some belief that to make the acknowledgment constitutes a weakness—a lack of virility, perhaps.

But there is no strength in roughness or ugliness or disorder, of themselves. They are blots on the 'scutcheon, flaws in the armor, hurdles in the way.

All this we say because the Pembroke Company, our good customers, made a beautiful "Eldorado" pencil display in the window of their store in Salt Lake City, for which we are obliged to them: for the ad, and for a chance to write a bit about a beautiful window.

Charred Paper Records Not Necessarily Lost

VALUABLE papers, of course, are always kept in fireproof containers of one kind or another, but the heat of a fire of any proportions is likely to char them beyond legibility, though not actually consuming them.

The photographic technologist, of the U. S. Bureau of Standards, through a series of investigations, has found that a sheet of carbonized or charred paper may be so photographed that both writing and printing that may have been on its surface will be reproduced in complete detail and clear contrast. The method is to place the charred sheet between two photographic dry plates of the "fast" or at least the "medium" grade, and keep them in the dark for two weeks. On development a good copy of the original impression is obtained.

—*Industrial Power.*



Eighteen Years' Paint Service

THE accompanying views of the Haverhill, Mass. Highway Bridge were recently taken showing this structure after Dixon's Silica-Graphite Paint had given remarkable protection for 18 years.

The photographs were taken shortly before the bridge was repainted with Dixon's Silica-Graphite Paint. A large portion of the bridge was in perfect condition in regard to paint protection, and engineers consider it a most emphatic endorsement of the exceptionally good wearing qualities that can be secured through the use of Dixon's Paint for steel work.

The Engineers in charge of this bridge fully realize the importance of keeping the metal work well protected and the economical advantages secured through using the best paint obtainable—Dixon's Silica-Graphite Paint.

DURBAN, 4TH OCT., 1923.

THE JOSEPH DIXON CRUCIBLE CO.

Dear Sirs: While returning the attached card and emphatically marking the "YES" square, we would like to take this opportunity of thanking you for interesting booklet "Graphite," and to assure you that its contents are read by every member of our staff, and voted by one and all as "TOPHOLE."

As buyers for 14 of the largest coal mines in this colony, we have found that "GRAPHITE" has been invaluable on many occasions.

It would be impossible for us to mention the many Dixon lines that we are interested in, but would particularly single out your Pipe Joint Compound, and Graphite Paint. The last mentioned we have recently become interested in through the good offices of Messrs. The Union Engineering Co., Ltd., of this town. Three lots of 50 gallons each have been applied on three different collieries and the results both for durability and covering capacity have been very gratifying.

It is seldom that the buying office gets bouquets thrown their way, but after the purchase of your graphite paint we received a rather nice one, and we feel that it is only fair to pass on a good thing.

May we in conclusion again thank you for your interesting publication, and repeat that we certainly do want "GRAPHITE" to continue coming our way.

Yours very truly,
JOHN WILLIAMS.

Graphite

PUBLISHED BI-MONTHLY BY THE
JOSEPH DIXON CRUCIBLE CO.

AT JERSEY CITY, NEW JERSEY, U. S. A.

*In the interests of Dixon's Graphite Pro-
ductions, including Crucibles, Lubricants,
Pencils, Paint, etc. Sent free upon request*

Vol. XXV NOV.-DEC., 1923 No. 6

Commercial Arbitration Under the New Jersey Act of 1923

BUSINESS men acquainted with the protracted delays and heavy expenses of litigation, and especially with its harmful effects on business relations, will be glad to know that a law, just enacted in New Jersey, enables them to settle their commercial controversies effectively by the oldest, most practical and most rational method yet developed—that of arbitration.

Arbitration consists in the submission of a controversy to one or more business men who are thoroughly versed in the technique of the business, are of the highest standing in their communities and whose decisions and awards the disputants are willing to accept as just and final.

Arbitration may be secured by including in every contract a clause providing that any dispute arising thereunder shall be submitted to arbitration. This practically amounts to INSURANCE AGAINST LITIGATION. It can also be secured without such a clause by agreeing to arbitrate the dispute after it has arisen.

The new law makes such agreements to arbitrate *valid, enforceable*

and irrevocable. It gives the awards of arbitrators *the force of court judgments* and surrounds arbitration with such safeguards as will assure justice and protect constitutional rights.

A number of chambers of commerce and trade organizations stand ready to assist New Jersey business men in the arbitration process by furnishing them lists of business men willing to serve as arbitrators, rules for the conduct of arbitration, services of clerks, etc. A number of leading business men of the State have formed an arbitration council and are endeavoring to spread the practice of arbitration under the new law.



The Business of Advertising

THE business of advertising is to draw your attention.

I have made something for you.

I suppose you not to know about this something.

You are the multitude, with millions of eyes to see and millions of things to look upon.

You are not looking my way—or if you are, you are not seeing—and you may so continue to my ruin unless I arrest your attention.

So I advertise—first to get your attention—to get you to think of what I have made for you.

If I succeed in this, half the battle is won.

Unless I succeed in this—I have lost before getting started.

Your attention, then, I must have.

It is quite simple and bare and trite, no doubt, but there it is.

What will seize your attention?

Answer that question, and you have successful advertising.

DIXON'S 677

A gear lubricant suitable for use during winter months as it is unaffected by low temperatures and shows minimum power losses. Gears shift as easily as in mid-summer.



Dixon's 677 may be obtained in steel drums with pump, providing a quick, clean means of lubricating gear-boxes. A necessity in every garage and service station. Write for quotations.

Tests prove that at freezing temperatures the average gear lubricant consumes considerably more power than does Dixon's 677. Difficulty in gear-shifting is also apparent.

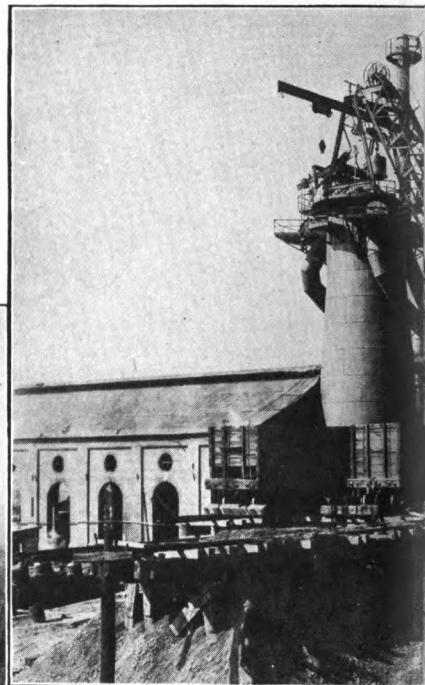
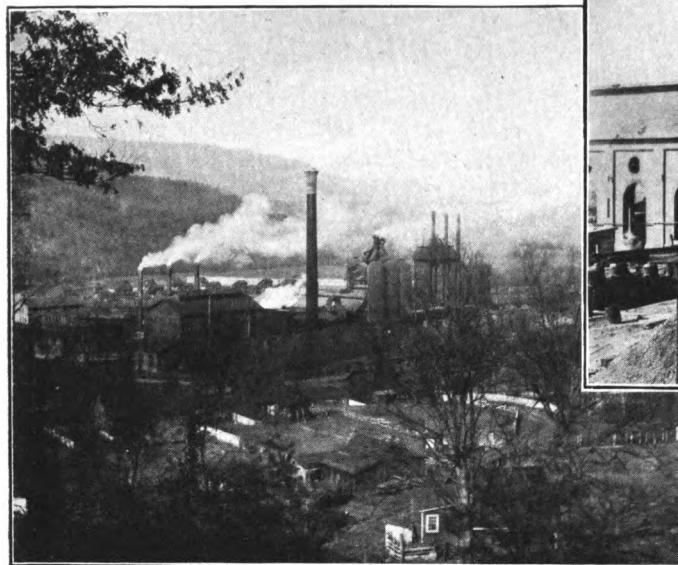
The ability of Dixon's 677 to withstand extremes of cold results not only in an actual reduction of power-losses, but also eliminates added strains to which all parts are subjected when the lubricant is too hard. Write for Booklet 190-G.

JOSEPH DIXON CRUCIBLE COMPANY
JERSEY CITY, N. J.



Established 1827

Makers of Quality Lubricants



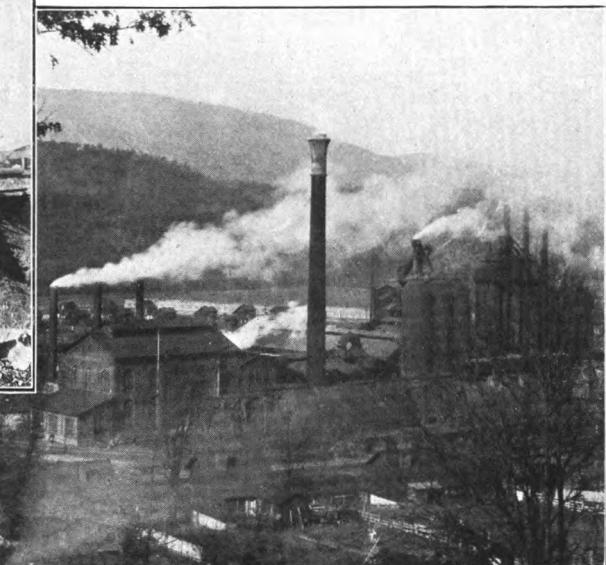
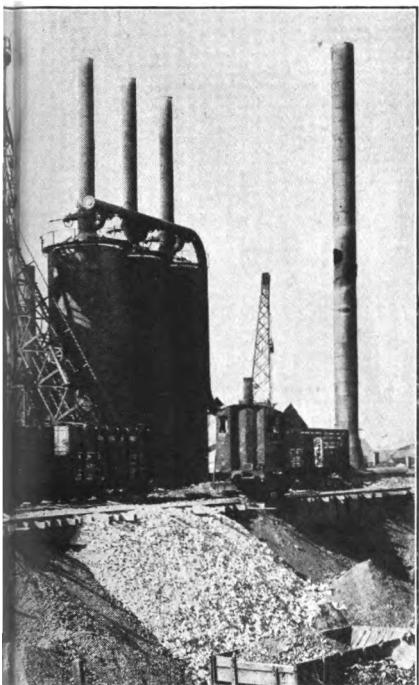
Plant Low Moor

THE illustrations above show the Covington and Low Moor plants of the Low Moor Iron Company of Virginia.

The Covington Furnace (center illustration) was designed and constructed so as to eliminate troublesome lubrication problems that otherwise bother operation, especially at the top of the furnace, where gas often bothers proper inspection.

All the journals and main sheaves were provided with roller bearings, both for the counterweight and bucket hoist. These are designed so that they can be packed with grease, and all other journals on top of furnace and elsewhere are provided with grease cups.

Dixon's Graphite Cup Grease is used exclusively to eliminate the wasteful dripping oil cans and making constant filling unnecessary. Later all oil cups



of the in Company

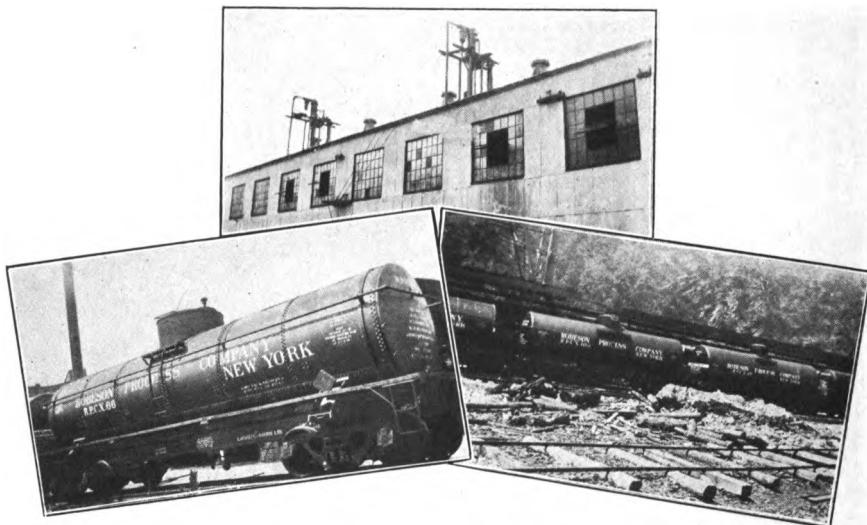
were changed on reach rods and rocker arms to grease cups on the blowing engines, also on the rod ends of hoist engine.

At the Low Moor Plant, oil cups on the reach rods of the blowing engines, and all cups on rod ends of the hoist engine, were changed to grease cups.

Dixon's Graphite Cup Grease No. 3 is used exclusively for this work. It is also used on the coke extractor, and on the cranes and shovels. No. 2 Grease is also used for rollers under the pallets at the Sintering Plant.

Quoting from letter received from Mr. Louis M. Hartwick, Engineer, "It is with pleasure that we can say that your grease is giving us absolutely perfect service."

It might also be added that this Company uses Dixon's Silica-Graphite Paint on all their stacks and exposed metal surfaces, as well as several other Dixon Products, such as grease for pump plungers, belt dressing and brushes for motors.



Tank Car Protection

THE large fleet of tank cars and the "dryer" building of sheet iron construction illustrated are owned by the Robeson Process Company of New York and Virginia, manufacturers of road binders. They are painted with Dixon's Silica-Graphite Paint.

Industrial concerns, tank car owners, and others, pay Dixon the double compliment of using Dixon's Silica-Graphite Paint and recommending it as best for long service, yearly economy, and unvarying reliability. Dixon is in the regular army of preparedness; you can always count on Dixon protection.

These are not the times to waste labor. Use a guaranteed paint that lasts where put.



PAY AS YOU GO.—PAUL—
“I'd go through anything for you.”

PAULINE—“Let's start on your banking account.” — *Melbourne Punch.*

Only Reliable Products Can be Continually Advertised

NOW there is another service which advertising performs. I think you will admit that, first of all, it is an advantage to feel that the thing you buy is being distributed at the minimum cost. But there is a second advantage in the purchase of an advertised product. It has been found that it almost never pays to advertise an inferior product. In other words, advertising has come to be a sort of assurance of your money's worth. No manufacturer could afford to spend his money in advertising, and then give you less than your money's worth.

If the product isn't good, the money that is used to advertise it will almost certainly be lost. Advertising may operate mainly on your sub-conscious mind, but if you get stung in a transaction, your conscious mind comes into operation and all the printer's ink that was used in forming a favorable impression wasted.”—*Power Advertiser.*

DIXON'S Graphite Cup Greases combine the superior lubricating qualities of the best mineral oils with the simplicity and economy of hard grease.

They are softer than the average cup grease, so begin to lubricate as soon as there is motion. Most greases do not begin to lubricate until after the parts are warmed up—that is they have to be thawed out by the frictional heat. Dixon's Cup Greases are all thawed out and ready to function—they flow with the revolving parts. They also keep the surfaces from metal contact.

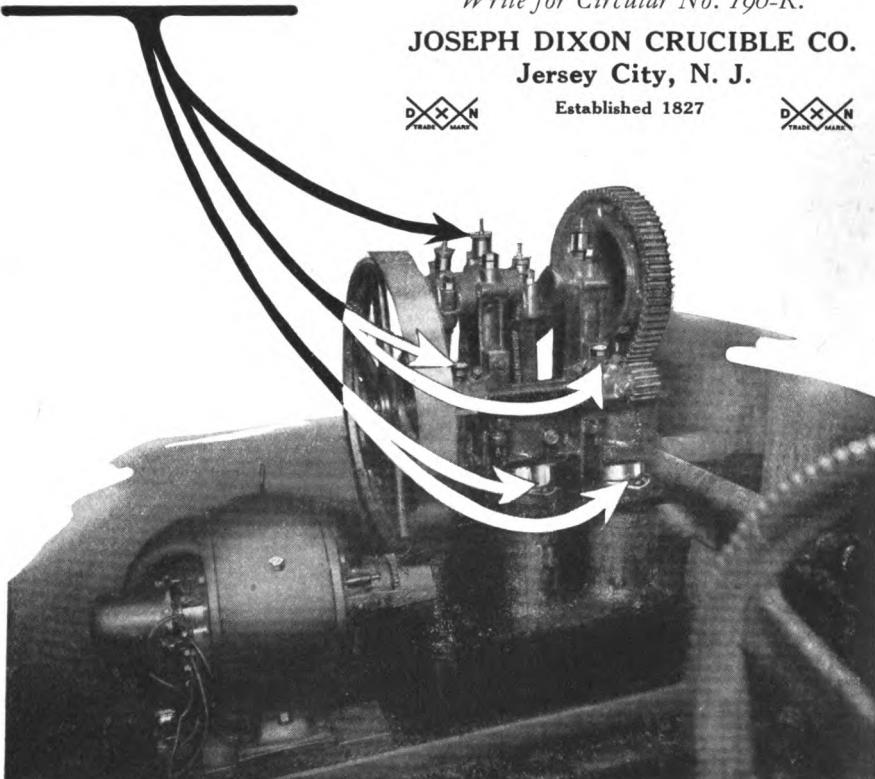
Wherever possible to use cup grease around the plant—on pumps, engines, shafting and other machinery, Dixon's will give better lubrication at lower cost.

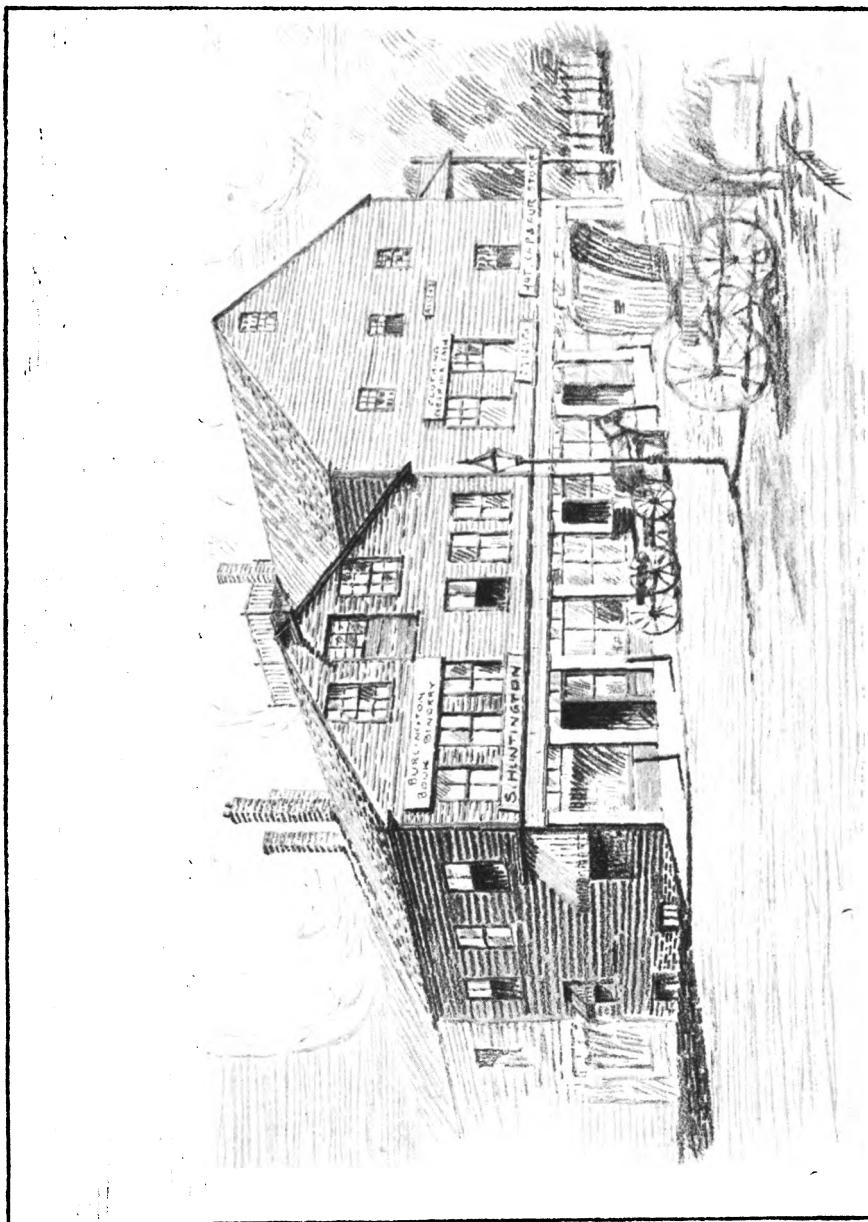
Write for Circular No. 190-R.

JOSEPH DIXON CRUCIBLE CO.
Jersey City, N. J.



Established 1827





The Old Corner Bookstore, Burlington, Vt.

The Old Corner Bookstore

NOT so many weeks ago a gentleman of pleasing manners stopped in to see us. It was kind of him to come, and we were glad to see him, as a friend, and as the Treasurer and Manager of the McAuliffe Paper Company, of Burlington, Vt., our good customers.

This gentleman, by name Mr. P. E. McAuliffe, had with him a little story which we asked him to prepare for **GRAPHITE**, to accompany the Eldorado pencil drawing so cleverly done by one of his company's employees, Mr. Harold S. Knight, which is reproduced on page 136.

This unique, old-fashioned New England building in former times was a tavern. Here Samuel Huntington in 1837 began business as a bookseller and stationer.

Mr. Huntington was of English stock, tracing his descent from a brother of that Samuel Huntington of Connecticut, whose signature may be seen on the Declaration of Independence.

For more than half a century, business was conducted in the book and stationery lines, to be succeeded by Whitney & Shanley, and then by The Corner Book Store. In 1907 the building, which replaced the old original wooden structure that was destroyed by a fire which occurred on December 31, 1887, was purchased from the Huntington Estate by the McAuliffe Paper Co., Inc., who are now conducting both a wholesale and a retail stationery, paper and book business. A singular coincidence is that the above concern is handling their wholesale business from the very location that S. Huntington began business in 1837—namely, No. 193 College

Street; and their retail department is in the modern four-story building erected later. P. E. McAuliffe began his stationery career, a twelve-year old boy, with Mr. Huntington, and for twenty-seven years was connected with the original concern and its successors. In 1913, he retired to establish the McAuliffe Paper Company. Associated with him are his three brothers: W. H. McAuliffe, President, of Ottawa, Ont.; R. L. McAuliffe, Vice-President, of Burlington; H. J. McAuliffe, Secretary.

There's something rich and warm and winey about such an incident. "We're growing up a bit ourselves," we said as we read this brief business biography. We, too, are not far off the 100-year mark. You might as well set us down as healthy centenarians.

. . . . We are indebted to Mr. McAuliffe, and we thank him for his kindness, and we thank Mr. Knight and congratulate him on his skill with the pencil. The Old Corner Bookstore lives again in his drawing.



Better Now Than Later

Come along, Jack Frost,
And coat the ponds with ice;
Paint the windows over

With your star-besprent device.
Make it look like Christmas time,
When the ways are hard,
And the kids build snowmen
In our back-yard.



THE SNOWSHOE GLIDE.—

"Are you from the Far North?"
"No, why do you ask?"

"You dance as if you had snowshoes on."—*Dartmouth Jack O' Lantern.*

Select *your* pencil from this case



LOOK for this distinctive blue and gold Eldorado Counter Case the next time you order pencils. You will find it very helpful in enabling you to select the *right* pencil for your hand and your work.

Somewhere in it is a lead well suited to the needs of everyone who uses a pencil. See for yourself how much the *right* pencil eases and quickens your work.

DIXON'S
ELDORADO
"the master drawing pencil"

JOSEPH DIXON CRUCIBLE COMPANY
Pencil Dept., 190-J, Jersey City, N. J.



Another Prize Dixon Window

MILLARD JACKSON, who represents Dixon Pencils in South Jersey, has sent us, proudly, a picture which we gladly reproduce.

It shows how the Capitol Stationery Company arranged Dixon Window Display Materials to capture a First Prize in a window dressing contest in Trenton, New Jersey.

The effectiveness of the display is but poorly shown in the reproduction. The striking Dixon Displays in all their glory were in the window: with beautifully packed Dixon Pencils and Dixon Erasers; and you look on their "counterfeit presentment" in black and white. Well, it is the best we can do to make such a reproduction and to add thereunto these words of praise and thanks.



NOT GUILTY.—FIRST STENO—
"The idea of your working steady eight hours a day! I would not think of such a thing!"

SECOND STENO—"Neither would I. It was the boss who thought of it."—*Town Topics*.

A Salesman's Prayer

LOOK with a forgiving eye on the buyers who lie to us about the low prices our competitors give them.

Strengthen the memory of those purchasing agents who are always going to give us a good order the next time we come around.

Teach us not to complain at the roller towels that the multitude have used before we get there.

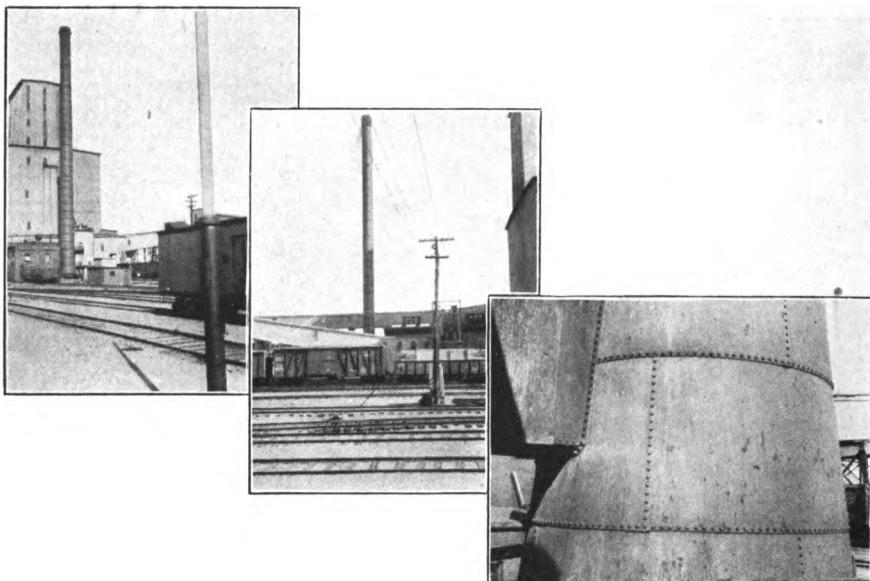
Give us stomachs like alligators that we may digest the stale bread, and loinsteaks cut from the neck where the yoke worked.

Teach us to be thankful for the stump-water served us and called coffee.

Toughen our hides, that we may sleep soundly in hotel beds that are already inhabited.

And please, above all things, grant our wives patience so they won't expect our wages until we get them.

REMINDER—



Elevator Stacks, Grand Trunk Railway Portland, Me.

PROMINENT among the organized departments of the Grand Trunk Railway System in Portland, Me., are the huge elevators with large stacks that can be seen miles away, marking the industrial progress of a mighty enterprise which gives good service to many thousands.

One of these stacks is 168 feet in height, the other 163 feet. They were painted eleven years ago with Dixon's Silica-Graphite Paint, color black, which is especially prepared for the protection of stacks and heated surfaces.

A recent inspection showed them to be in remarkably good condition despite the many years with the changing seasons, of burning suns, wind-driven dust and sleet storms, as well as the salt air from the harbor.

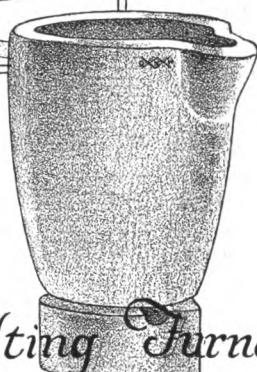
The base of the stack shown in one of the views gives one a good idea of how exceedingly well the paint looks after these years of adequate service. Railway officials are not slow to figure up the advantages gained by getting the longest wearing paint for such work, for such a paint when compared with cheaper paints more than pays for itself through the good service given.

◆

TOO GREAT A RISK—LIFE INSURANCE AGENT — "One moment, sir, before I fill in your application. What make of car do you drive?"

CLIENT—"I don't drive any—I hate them!"

LIFE INSURANCE AGENT—"Sorry, but our company no longer insures pedestrians!"—*The Passing Show (London)*.



Tilting Furnace Crucibles

FOUNDRIES using Rockwell, Ideal, Hausfeld, Case, "M. R. V.," Monarch, or other tilting furnaces will find Dixon's Tilting Furnace Crucibles and Bases for same dependable and economical.

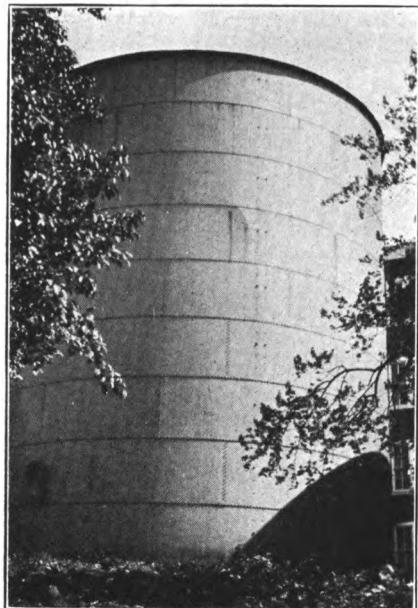
The name DIXON on any crucible gives assurance that it is the standard and is backed by nearly a century of experience in crucible manufacture.

Write for Booklet No. 190-A, in which are illustrated the full line of Dixon Graphite Crucibles, their sizes and capacities.

Joseph Dixon Crucible Co.

DIXON Jersey City, N. J., U.S.A. DIXON
Established 1827 TRADE MARK

**DIXON
GRAPHITE
CRUCIBLES**



Grain Storage Tank, Schuylkill Flour Mills

Leesport, Penna.

THE above illustration shows the grain storage tank of the Schuylkill Flour Mills which is 45 feet in diameter and 45 feet high.

It was originally painted with red oxide and two years later given one coat of Dixon's Silica-Graphite Paint. This coat is what is seen in the photo after having given a service of six years.

Realizing the advantages or economy of painting at regular intervals, the owners have decided to repaint it again with Dixon's Paint.



THAT SETTLED IT.—"What does she want a divorce for? Isn't Billy good to her?"

"Oh, yes; but her cook doesn't like him."—*The Sydney Bulletin.*

Little Sermons to Salesmen

(Continued from page 127)

tically every large retail establishment in the country.

"The fault lies with the proprietors who are not awake to the advisability and necessity for training their salespeople; and going a little farther, giving their salespeople a real reason why their minds should be developed and applied along the lines of sales.

"The opportunity for this class of work is great and the need is very apparent. Weekly meetings of the sales force, at which time general discussions might be held, are the best remedy known so far for overcoming this situation.

"Another method very successfully used is that of posting one or two articles each week, the items taken from stock that ordinarily moves slowly, and setting up a good reason for offering the items during the week to everyone who comes into the store.

"Upwards of a hundred items can be offered during the year, likewise talked about, which is only another way of advertising.

"What good does it do to fill an expensive window with a lot of desk pads and not another thing or not a word about the item itself?

"You cannot sell desk pads to a person who has no desk. Would it not be better, if you had to display desk pads, to finish the display with everything that goes on the pad? Then you would have a co-related display that might not sell all of the desk pads but that would call attention to something else that could be used in some other way."

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